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PROCEEDINGS

OF THE

AMERICAN SOCIETY

OF

CIVIL ENGINEERS

VOL. XLV—No. 1

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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PROCEEDINGS

This Society is not responsible for any statement made or opinion expressed in its publications.

SOCIETY AFFAIRS

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MINUTES OF MEETINGS OF THE SOCIETY

December 18th, 1918.—The meeting was called to order at 8.30 P. M.; J. Waldo Smith, M. Am. Soc. C. E., in the chair; Chas. Warren Hunt, Secretary; and present, also, 100 members and guests.

Leonard S. Doten, M. Am. Soc. C. E., Major, Quartermaster Corps, and Officer in Charge of Sanitation Section, Engineering Branch, Construction Division of the Army, spoke on "Sewage and Wastes Disposal for the United States Army", illustrating his remarks with lantern slides. The subject was discussed by Messrs. Leonard Metcalf, Nicholas S. Hill, Jr., H. F. Dunham, Almon L. Fales, Kenneth Allen, George L. Robinson, and Leonard S. Doten.

The Secretary announced the following deaths:

ALONZO CLARENCE BELL, of New Orleans, La., elected Member, March 7th, 1900; died December 1st, 1918.

JOHN STERLING DEANS, of Phœnixville, Pa., elected Member, May 4th, 1887; died December 16th, 1918.

WILLIAM JOSEPH HARDEE, of New Orleans, La., elected Member, May 6th, 1896; died November 17th, 1918.

CASSIUS WILLIAM KELLY, of New Haven, Conn., elected Junior, March 1st, 1882; Member, June 6th, 1888; died December 3d, 1918.

ALEXANDER JOSEPH NORRIS, of Lima, Peru, elected Member, October 3d, 1911; died May, 1918.

HERMANN LAUB, of Pittsburgh, Pa., elected Member, September 1st, 1897; died December 10th, 1918.

LOGAN WALLER PAGE, of Washington, D. C., elected Member, July 1st, 1909; died December 9th, 1918.

MYRON HALL PECK, Capt., Engrs., U. S. A., of San Francisco, Cal., elected Associate Member, January 5th, 1909; Member, March 14th, 1916; killed in action (France), October 9th, 1918.

EDMUND MOORE RHETT, of Wilmington, Del., elected Junior, November 4th, 1902; Member, October 4th, 1910; died October 10th, 1918.

WILLIS ROSWELL SMITH, of Chicago, Ill., elected Member, March 4th, 1908; died August 1st, 1918.

ELLIOTT HINCKLEY WILSON, of Butte, Mont., elected Member, February 1st, 1888; died November 27th, 1918.

BRUCE RITCHIE HONEYMAN, Capt., Engrs., U. S. A., of St. Paul, Minn., elected Associate Member, September 5th, 1911; died in service (France), October 5th, 1918.

ADELBERT PHILO MILLS, Capt., Engrs., U. S. A., of Ithaca, N. Y., elected Junior, September 3d, 1907; Associate Member, September 3d, 1913; died in service (France), October 20th, 1918.

HAROLD COE OGDEN, of Seattle, Wash., elected Associate Member, October 29th, 1912; died October 22d, 1918.

CAREY SIMON PRATT, of Trenton, N. J., elected Associate Member, June 4th, 1913; died November 25th, 1918.

HAROLD AUGUST HASTRUP SCHULTZ, of Birmingham, Mich., elected Junior, March 2d, 1915; Associate Member, May 15th, 1917; died November 5th, 1918.

ROBERT EARLE SHIPLEY, of Texarkana, Tex., elected Associate Member, October 9th, 1917; died October 11th, 1918.

JAMES WILSON, of Montchanin, Del., elected Associate Member, September 3d, 1913; died July 29th, 1918.

DONALD POWER DENHAM, of Peterboro, Ont., Canada, elected Junior April 17th, 1917; date of death unknown.

FREDERIC BORRADAILE PRICHETT, Lieut., Field Artillery, U. S. A., of Philadelphia, Pa., elected Junior, May 15th, 1917; wounded in action (France); died September 6th, 1918.

Adjourned.

ITEMS OF INTEREST

Engineering Division of National Research Council

A meeting of the Engineering Division of National Research Council was held on November 15th, 1918, at the Engineering Societies Building, New York City.

The meeting was called to order at 10 A. M., with Dr. Henry M. Howe in the chair. There were present, also, Messrs. W. J. Lester, Arthur A. Hammerschlag, Ambrose Swasey, George S. Webster, Philip N. Moore, John R. Freeman, A. A. Stevenson, W. B. Price, and Edward P. Hyde of the Advisory Committee, officially representing Government Departments and Engineering Societies; W. H. Burr, F. B. Jewett, L. B. Stillwell, W. R. Walker, and F. M. Waring, members at large of the Advisory Committee; Bradley Stoughton, of the Executive Committee; John C. Merriam, Acting Chairman, National Research Council; also, M. I. Pupin, Zay Jeffries, Calvin W. Rice, Secretary, American Society of Mechanical Engineers, F. L. Hutchinson, Secretary, American Institute of Electrical Engineers, and Alfred D. Flinn, Secretary of Engineering Foundation.

Chairman Howe read a statement about the changing conditions of the present day, and the needs growing therefrom for change in the organization and methods of National Research Council, as follows:

"It is well to bring before you again the chief purpose of the National Research Council and of this its Division of Engineering, to stimulate others to make researches rather than to make them ourselves, because a given amount of our energy spent in inciting others will accomplish far more than if applied in executing them ourselves. This is because there are scattered through the numberless governmental, educational, and industrial laboratories of the country a very great number of investigators, not only capable of being stimulated, but willing to aid in co-operative broadly planned research, rather than to follow the haphazard methods of the past.

"Taken collectively, these laboratories and their personnel can produce an annual crop of knowledge the value of which is of the order rather of billions than of millions of dollars. I invite you to regard this potential product as a crop, to be planted, fertilized, harvested, and distributed with the same order of statesmanship, the same breadth of view, with which we treat any other great human product or achievement, whether agricultural, industrial, or transportational.

"The displacement of the stage coach by an advanced and centralized system of transportation was neither more needed nor more inevitable than the replacement of our past method of haphazard research, with its misguidance, its lack of interpretation, of clarification, and of diffusion, its desultoriness, its duplication, by an advanced, guided, and collaborative arrangement which shall plan vast systems of research broadly, shall execute them methodically and economically, and shall so clarify and distribute their results that they shall serve mankind most quickly and most efficiently. As it is to some to farm, to others to mill,

to others to transport, to others to distribute, and to still others to bake, so does God give to some the vision to plan, to others the skill to execute, to others the analytical power to interpret, and to others clarification, replacing the rawness of crude truth with such attractiveness, such zest leading to eager assimilation, as the *cordon bleu* gives the miller's product.

"In the haphazard past each investigator was his own planner, manipulator, interpreter, and clarifier. However efficiently he did that fraction of this complex work which God traced for him, he worked with relative inefficiency at the three others.

"The evolution of research should be directed toward this end, of giving to each investigator the specific part of this team work for which he is fitted by Nature; but, quite as the evolution of our transportation system has taken many decades and has occurred in large part through trial and error, so is it likely to be with the evolution of research.

"The National Research Council aims to devise a mechanism and procedure which shall at least lead to some important progress in this direction.

"It is well to face squarely the difficulties, and especially the psychological ones.

"Our truly democratic aims must show their democratism convincingly. We must make plain our desire to stimulate investigators according to their inherent fitness, their fertility and powers of production, rather than according to the prestige or importance of the institutions with which they are connected. We must convince, not only the engineering profession, but also the various co-operating investigators, that we aim to distribute public recognition among them equitably. We shall have the delicate task of selecting officers with the skill needed for assigning the different parts of the team work of research accurately. Success clearly depends to an unusual degree on putting the right men in charge.

"The catholicity of our course is shown by our having already caused one or more researches, of greater or less importance, to be undertaken in each of 35 different laboratories in 11 different States. We have drawn on, not only some of the great industrial, educational, and governmental laboratories, but on many of very moderate size, and indeed on some little known, private laboratories.

"Here we may ask whether our national engineering societies might not with advantage give more attention than at present to the promotion of research, and whether the National Research Council might not co-operate very closely with them and with the Engineering Foundation in this work. This co-operation might assume any one of several different forms. For instance, the Council could act as their department of research, as it does now toward the Council of National Defense and as it has toward the Signal Corps. Or it might act in any advisory way, or with any intermediate degree of responsibility that might be decided on. A relation which would make it clear that the weight and authority of these bodies supported the policy and acts of our Engineering Division should lessen the psychological difficulties to which I have referred. We all know that an author is pained far less if the rejection of a professional paper is by a committee than if it is by an individual officer. On this same principle, the increase in our weight, responsi-

bility, and authority, which such an association with these great engineering bodies would create, besides increasing the attractiveness of our invitations to co-operate in research, and make our decisions, selections, and appointments juster and wiser, would make their wisdom and justice more convincingly evident.

"The end of the war, the victory of the World's train-load of passengers over the anarchistic and brutal robbers who have tried to hold it up at pistol's point, leaves us all unsettled. We have to adjust ourselves to an order which must needs differ materially from the old. This period of adjustment, this general unsettling of mankind, lends itself to advances of all kinds. The frictional resistance to change which it offers is of the low friction of motion as distinguished from the high friction of repose. Now is the time to plan for the new order of research.

"The reconstruction of our conditions and of those of Europe and Africa will call for as high an order of patriotism as the war has demanded; for, while the need of wisdom and energy will be as great, the emotional attraction of war will be lacking. Our devotion to this work is called for, not only by humanity, but by enlightened interest. Only as Europe is rich and prosperous can she buy of us. Only as a thoroughly penalized Germany is enabled to create wealth can she pay her debt. That a debtor is an asset is as true of nations as of individuals. Of course, we must care first for allies, then for the truly neutral states, and then for the nominally neutral ones. After this, and after doing all we can to hasten the development of the African colonies, with due care that they shall go only to those powers which have proved their fitness for the uplifting of backward peoples, it will be to our interest to enable even Germany to renew her industries, though, of course, our help must be guarded. Here, as ever, the dictates of humanity and of enlightened self-interest are alike."

Vice-Chairman Lester made a verbal report on problems which had been receiving the attention of the Engineering Division, among the most important of which were: Investigation of the centrifugal gun and its adaptation to use on aeroplanes; the design of heavy tanks and "tankettes"; the development of a walking-beam tractor and a dark ray signaling telescope; a study of inexpensive hydrogen balloons of thin rubber for carrying light weights long distances; the improvement of aeroplane fuel; balloon flares; a double-propeller rotary air engine; a herring-bone gear type of gasoline engine; and a device for determining the latitude and longitude of aeroplanes in flight.

Chairman Howe announced the appointment of Mr. G. H. Clevenger, of the Bureau of Mines, as Chairman of the Section on Metallurgy. Dr. Howe also asked for expressions of opinion on the desirability of having the headquarters of the Engineering Division in New York City, instead of in Washington.

Dr. Merriam discussed briefly the future peace organization of the National Research Council, the conclusion of his address being that any new organization of the Council must provide the fullest practicable

co-operation with Engineering Foundation and the great Engineering Societies.

Chairman Stoughton, of the Section on Metallurgy, reported on the development of better alloy steels for helmet and body armor. He also discussed the Bridgman gun, manganese conservation, electric welding for ships, the nature of steel and its influence on welding, etc.

Mr. Stevenson presented a brief written report from the Steel Ingot Sub-Committee. He suggested the utilization of existing Government steel plants for experimental research, and also mentioned the importance of pyrometry in connection with steel-ingot problems.

Dr. Jeffries reported briefly on investigations into the effects on the physical properties of steel and non-ferrous metals, of working them at relatively low temperatures.

The Chairman read a list of fourteen proposed committees of the Section on Metallurgy, in order to obtain expressions of opinion, later, as to the advisability of establishing such committees. The Committees are as follows: New Hardness Testing Machine; Erosion of Big Guns; Elimination of Sonims from Steel; Elimination of Sulphur in Open-Hearth Practice; Design of Large Shock Testing Machine; Allowable Upper Limits of Sulphur and Phosphorus in Steel; Uses of Cadmium; Production of Metallic Zirconium; Production of Metallic Beryllium; Standardizing Bearing Metals; Uses of Tellurium; Effect on Quality of Steel of Finishing Temperatures in Rolling; Heat Treatment of Carbon Steel; and Uses of Alloy Steels.

Mr. Swasey addressed the meeting briefly on the need of co-operation between scientists, engineers, and manufacturers during the coming reconstruction period.

On motion, duly seconded, the following resolution was adopted:

"*Resolved*, That the Secretary be instructed to send to each member of Engineering Council, and to the Secretary of each National Engineering Society represented in Engineering Council, a copy of the remarks of Chairman H. M. Howe at the meeting of this committee this morning."

Report of the Committee on Licensing Engineers of the San Francisco Association

The following report of the Committee on Licensing Engineers was adopted by the San Francisco Association at its meeting of October 15th, 1918:

"Your Committee, appointed to draft an engineer's license law, has studied the various issues involved in considerable detail. It has on two occasions sought specific instructions from the Association on whether it was the desire of the Association that a law be drafted to license those practicing in any or all lines of civil engineering or whether it was desired to draft a law for licensing only those entitled to practice structural engineering. On neither occasion has the Asso-

ciation given such instructions. It has instead left the matter to the Committee's discretion.

"The original instructions to the Committee undoubtedly included the framing of a law to license all civil engineers, although it is believed the proponent of the original motion had more directly in mind the licensing of structural engineers. The Association has already, on several occasions and particularly before the Judiciary Committee of the last Legislature, gone on record very definitely as opposed to any form of license law. While a small minority of the members of the Association favors the enactment of a license law, a very substantial majority of the members, including many who are absent in the service of the nation, is unalterably opposed.

"Although following the study necessary for the preparation of such license law without bias or the influence of any previously formed opinions, your Committee has been led by its studies to certain conclusions:

"First, any law for licensing all engineers entitled to practice civil engineering must, because of the diversity of the professional work thus covered, be either so cumbersome as to be impracticable or be so lenient as to be wholly ineffective. There is no general demand for such legislation either by the public or by the engineering profession. The enactment of such legislation is believed to be wholly unnecessary in an exercise of the police power of the State, which is the only possible justification for such legislation, and its enactment will prove burdensome to the profession instead of beneficial.

"Legislation for licensing structural engineers has proven a necessary step in certain other States, but merely as a remedial measure to afford relief from certain unjust legislation enacted at the instance of architects. An attempt was made at the last session of the California Legislature to pass such measure benefiting architects by granting them a monopoly of certain work at the expense of engineers. Although the engineering profession was not apprised of this attempt until the eleventh hour, and then too late to secure complete co-operation between the engineers of Northern and Southern California, the attempt was defeated. Your present committee has co-operated with the Associations from Southern California—one of its members has personally visited officials of these Associations and has perfected arrangements for co-operative opposition to any attempt at unjust legislation at the coming session of the Legislature. It has been learned that the measure proposed to the last Legislature will be revived and brought before the next Legislature. With co-operation and preparation by the engineering profession for opposition, it is not believed that this second attempt will be successful.

"Your Committee is also of the opinion that a law for licensing structural engineers should not be prepared in behalf of your Association. Such legislation has many of the disadvantages enumerated for a general engineering license law and has no reason for existence where not needed to remedy unjust conditions forced by other professions. Instead it believes that a committee on legislation should be appointed to co-operate with similar committees already appointed by the Association from Southern California in opposing any legislation which will work an injustice to the engineering profession, that such com-

mittee be empowered to represent the Association before the Legislature, if necessary, in opposing legislation detrimental to the profession, and, finally, should it prove impossible to prevent the enactment of legislation, then, as a last resort, the committee to use its best efforts to secure necessary modifications.

"It is believed that even if a strong demand for the enactment of a license law existed, which is not the case, the present is not an opportune time for its enactment while a considerable proportion of the membership of the Association is absent in the service of the nation through its hour of need and when the absent members could have no part in forming a law which would vitally affect their future professional practice.

"A protest has been received from France from Major John D. Galloway, Past-President of the Association, written August 26th, but now timely. It is as follows:

"'I received a notice of the meeting of the Civils and see that the old licensing idea will not down.

"'You can tell that crowd for me that we are over here fighting exactly that kind of thing. Special privilege is the root trouble of this war with a crowd who were not satisfied with controlling the activities of all Germany but wanted to control the world. The basic idea of those Los Angeles architects is to crowd out the contractor from design and to force the house owner to employ them. It is hardly the fair thing when numbers of engineers are over here, for our own crowd to start that kind of a thing when we are away.'

"Respectfully submitted

"W. L. HUBER
"H. D. DEWELL
"A. T. PARSONS
"Committee on License Law."

The Engineers' Service Bureau, San Francisco, Cal.

In connection with the recent establishment of the Engineering Societies Employment Bureau, the following may be of interest:

A circular has been received, signed by Charles D. Marx, Past-President, Am. Soc. C. E., Chairman, Joint Council of the Engineering Societies of San Francisco, announcing that an Engineers' Service Bureau is being established by the co-operation of the San Francisco Sections of the National Societies of Civil, Electrical, Mechanical, Mining, and Chemical Engineers.

A list of engineering vacancies is to be compiled, and application blanks may be obtained from the Secretaries of each of the five Sections interested. All applications must be mailed to "Service Bureau", Engineers' Club, 57 Post Street, San Francisco, Cal., and members of the Societies mentioned, employers, and others are asked to report promptly prospective or actual vacancies which can be filled by men with technical training and experience in the five lines represented.

First American Highway Congress

A joint meeting of American highway engineers was held in Chicago, Ill., during the week beginning December 9th, 1918, under the auspices of the American Association of State Highway Officials and the Highway Industries Association. In connection with this meeting, many allied organizations were also in attendance.

The members of the Congress were welcomed by the Hon. Frank O. Lowden, Governor of Illinois, and responses were made by Mr. Edwin S. Duffey, for the American Association of State Highway Officials, and by Mr. S. M. Williams, for the Highway Industries Association.

At the executive sessions of the American Association of State Highway Officials, resolutions were presented relative to Federal participation in road work and the release by the Government of materials used in road construction and also men in military service as soon as practicable, in order that much needed work and repairs might be commenced.

At the joint sessions, papers were presented by the Hon. James I. Blakslee, Fourth Assistant Postmaster-General, on "The Development of Motor Parcel Post Routes"; by Roy D. Chapin, Chairman, National Highways Transport Committee, on "Highway Transportation, Present and Future"; by E. J. Mehren, Assoc. Am. Soc. C. E., on "A Suggested National Highway Policy and Plan"; by A. R. Hirst, of Wisconsin, on "The Underlying Principles Controlling the Laying Out, Marking, and Maintaining of a State Highway System", by L. J. Brooks, of the Chamber of Commerce, of St. Louis, Mo., on "Highways and Their Relation to the Producer and Consumer"; by William G. Edens, President of the Illinois Highway Improvement Association, on "How Illinois Voted a $60,000,000 Road Bond Issue"; and by others.

At the joint session, the Congress adopted resolutions to the effect that Federal participation in highway work be administered by the Federal Highways Commission.

The members of the Congress were saddened by the sudden death, on December 9th, 1918, of Logan Waller Page, M. Am. Soc. C. E. Mr. Page, who was Director of the United States Office of Public Roads and Rural Engineering, had come to Chicago to attend the Congress, and had been scheduled to address the meeting on "Highway Control by Federal Government Under War Conditions". In place of this address, A. D. Williams, Assoc. M. Am. Soc. C. E., State Highway Engineer of West Virginia, paid a high tribute to Mr. Page as a citizen and Government official.

Associated General Contractors of America

On November 20th and 21st, 1918, delegates representing local associations of general contractors from various parts of the United States,

and others, met in Chicago, Ill., for the purpose of formally organizing a National Society.

A Constitution was adopted, officers were elected, and a platform outlined which included a code of ethics, mutual aid, co-operation with other associations, protection, and proper publicity.

Addresses were made by Brig.-Gen. R. C. Marshall, Jr., Chief of the Construction Division of the War Department, Col. William A. Starrett, M. Am. Soc. C. E., Chairman of the Committee on Emergency Construction of the War Industries Board, and Harry A. Wheeler, President of the Chamber of Commerce of the United States.

Other points than those outlined in the platform were brought out by the addresses of various members, among which were the prospect of conferring jointly with the American Society of Civil Engineers and similar organizations on the revision of specifications and contracts, the working out of a joint labor policy, influencing legislation, establishing a uniform cost-keeping system, etc.

Eightieth Birthday of Robert W. Hunt, M. Am. Soc. C. E.

The eightieth birthday anniversary, on December 9th, 1918, of Robert W. Hunt, M. Am. Soc. C. E., of Chicago, Ill., was one of celebration in his honor, on the part of his business associates and friends.

In the afternoon a large reception was held at the Mid-day Club, which was attended by a great number of Mr. Hunt's friends in the Engineering Profession. On the same evening a dinner was tendered to Mr. Hunt at the Blackstone Hotel by his partners and by the heads of departments and branch managers of Robert W. Hunt and Company.

On behalf of the Board of Directors of the American Institute of Mining Engineers, of which Mr. Hunt has twice served as President, Mr. S. T. Wellman presented him with an engrossed set of resolutions, bound in morocco and printed on parchment, to which was added the signatures of the Directors and officers of the Institute as well as those of many of its members.

As a surprise to Mr. Hunt and in his honor, James C. Hallsted, M. Am. Soc. C. E., one of his business partners, announced that $5 000 had been guaranteed as the nucleus of a fund the proceeds of which are to be used annually for prizes and medals for the best papers, presented before the American Institute of Mining Engineers, on iron and steel subjects. This fund will probably be known as the Robert W. Hunt Fund, and is planned as an incentive for young engineers to engage in research work. It is to be administered by the American Institute of Mining Engineers, and the awards will be made by a committee appointed by its President.

Mr. Hunt has been engaged in the manufacture of iron and steel practically all his life. In 1860 he established the first laboratory in

America, in connection with the iron and steel industry, for the Cambria Iron Company at Johnstown, Pa., and also had charge for that Company of the rolling of the first commercial order of steel rails made in the United States. He has also been largely instrumental in the development of the Bessemer process, and has constructed Bessemer mills in many parts of the country.

In 1912, Mr. Hunt was the recipient of the John Fritz Medal for "his contributions to the early development of the Bessemer process."

The Engineer and the State

The following communication from F. Herbert Snow, M. Am. Soc. C. E., President of the Philadelphia Association, is published here at the request of that Association, in order that the views expressed therein may be brought before the members of the Society:

"MR. HENRY T. SHELLEY,
"Secretary, Philadelphia Association
of Members of the American Society of Civil Engineers.

"DEAR SIR:—I desire to meet with the members of the Board of Directors, in which the government of the Association is vested, at the Engineers' Club at 8 o'clock on the evening of December 2d, 1918, and would like to have you make corresponding arrangements.

"Unfortunately, the Annual Meeting, provided by the Constitution to be held on the first Monday of October, 1918, was not attended by some of us, owing to drastic and necessary orders of the Public Health authorities. The Association is required to hold regular meetings on the first Monday of January, April, and October; but special meetings may be called at the discretion of the Board of Directors or by the President upon written request of at least ten members.

"The times are no less stirring since the mask of war was raised, in fact, there are so many opportunities for things to be done in the advancement of engineering knowledge and practice, and the furtherance of the general welfare of the Profession, that we should reach early conclusions as to what, if anything, the Association purposes to attempt, and get busy in their accomplishment.

"'Winning the War', while the dominant purpose, brought to the fore the Engineer as the man of the hour. The historian of the times will record the tremendous achievements, at home and abroad, which crowned the efforts of our Government and attest to the resources, inventive genius, and adaptability in emergency of the American Engineer and Producer. Engineering knowledge, skill, and ability were commanded to a degree never before necessary. In the National defensive crisis and in the offensive programme, the engineer made good. In the reconstruction and developmental period he should also make his impress felt.

"Although hostilities in Europe are over, warfare against waste and inefficiency has only begun. Transpiring events are affecting and changing the social and economic fabric of the whole world. So stupendous are the forces for good and bad which have been liberated

during the war, and so august is the spectacle of their workings to-day, that the individual is humbled by contemplation of the situation.

"The signs of the times portend an extended exercise of governmental functions along comprehensive, economic lines for the general welfare. There is honest difference of opinion as to the extent to which Federal and State Governments should attempt to exercise the functions; but one thing is sure, the Country's experience of the last two years has revolutionized the previous concepts of 'any old thing' being good enough so long as the wheels went around.

"We are, to-day, more than ever, imbued with the spirit of loyalty and devotion to the ideals which have made here, out of many races, a free nation pledged to justice and equality to all. Nevertheless, we are not unconscious of perils to which our institutions are subjected. The people of this free Government are Sovereign, because Reason and Justice are enthroned, and Knowledge is Power. It may be emphasized that knowledge and mental equipment are bound to lead in the life of a democratic nation, else there must be decadence and ruin.

"Therefore, to not a few observers has come the belief that to the Engineering Profession is about to be accorded its proper place in the economic life of nations, and that the Profession is bound to assume a position of the utmost importance in all future activities.

"It is our wish that this should be so. The Profession having been trained, tried, and proven, should now come into its heritage and rightful participation in society and governmental affairs; but it is questionable whether this can happen unaided by the best effort of the Profession.

"We might as well look the situation in the face and ask whether we shall learn by bitter experience that for survival the Profession must apply to itself the rules and laws it applies and directs for the benefit of others. The Profession must scientifically classify order and govern itself, or eventually go under.

"There are many individual members, perceiving the situation, who have a willing spirit, but that is all. There is no body suitable or adequate to tenant this spirit.

"The sovereign State of Pennsylvania enacts laws for the benefit of its citizens, as other States of the Union do. Many of these laws directly affect, and some of them limit adversely and to the public injury, the exercise of engineering resources. And this is so for no particular reason other than that the engineer himself does not bestow time and attention to these matters of public welfare. There is no reason, so we are told, why matters appertaining to the directing of the 'great sources of power in Nature for the use and convenience of man' should not be connected in a practical degree to and with the reasonable requirements and standards of organized engineers representative of the Profession.

"At the present moment the question is being discussed whether the Constitution of the State of Pennsylvania, under which every municipal and private corporation exists, is adequate for the needs of modern times. There are municipal and other public problems largely economic whose proper solution requires authority to exercise powers to a greater extent than is now granted by the Commonwealth. If and when a constitutional convention is called, and before that time, even now when per-

plexing legislative problems arise, engineering counsel and advice would be sought if there were a representative body from whom worth-while opinions might be obtained. The National Society obviously cannot deal satisfactorily with such purely local questions. What is needed is a local body representative of the federated associations vested with power to consider and act upon its own district matters and concerns, and to express them in practical ways to municipal and State authorities.

"It is important to engineers practicing in Pennsylvania how governmental agencies dealing with engineering matters are constituted and the scope of their duty. Certainly, it is not beneath the dignity of the Profession to participate in the councils of the State along these lines; but so long as we refrain from having a proper body that is representative we may expect to be omitted from such councils.

"Evidently, organized direction of engineering matters in each State is needed. This idea aims not at lessening the fact or force of federation nor of unification of interests. All three are proper allied agencies to be employed; but there must be a corporeal body, representative of the Professional spirit and life to meet situations where Professional thought and purpose need to be manifested through a visible agency. To neglect this body means to neglect our true heritage and that another will take our crown.

"The subject comprehends not only civil, but all branches of engineering, places the Profession in a superlative position where it belongs and the federation mentioned has for its administrative unit each sovereign State or territory.

"I hope this letter will be read at the meeting and be spread on the minutes. If anything is to be done along these lines we should get active at once. If the members of the Board think it best to do little or nothing, we can govern ourselves accordingly. I am going to be guided by the wisdom of the majority, and wish to have it understood that the thoughts hereinbefore advanced are personal and submitted for the purpose of discussion only.

"Yours truly

"F. HERBERT SNOW, *President.*"

The Washington Award

The Washington Award, founded by John W. Alvord, M. Am. Soc. C. E., and administered by the Washington Award Commission, is "made each year to an engineer whose work in some special instance or whose services in general have been noteworthy for their merit in promoting the public good". The award for 1918 has been made to Herbert Clark Hoover, M. Am. Soc. C. E.

ANNOUNCEMENTS

The Reading Room of the Society is open from 9 A. M. to 10 P. M., every day, except Sundays, Fourth of July, Thanksgiving Day, and Christmas Day.

FUTURE MEETINGS

February 5th and 19th, 1919.—8.30 P. M.—Meetings will be held as usual on these evenings, that of February 5th being the regular business meeting of the Society. The arrangements for the second meeting are in the hands of the New York Meetings Committee, and programmes for both meetings will be announced later.

ENGINEERING SOCIETIES EMPLOYMENT BUREAU

Under the direction of Engineering Council, the American Society of Civil Engineers, the American Institute of Mining Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, have established the Engineering Societies Employment Bureau, under the management of their Secretaries. One of the purposes of the Bureau is to keep in touch with all engineering firms, with a view of supplying them with desirable men.

Plans are now under way to assist in placing men who are retiring from Government Service.

The Bureau is not intended to be exclusively for the benefit of members of the Founder Societies; non-members who are introduced properly will also be registered.

Further information, registration forms, etc., may be obtained from Walter V. Brown, Manager, Engineering Societies Employment Bureau, Room 903, Engineering Societies Building, 29 West 39th Street, New York City.

SEARCHES IN THE LIBRARY

In January, 1902, the Secretary was authorized to make searches in the Library, upon request, and to charge therefor the actual cost to the Society for the extra work required. Since that time many searches have been made, and bibliographies and other information on special subjects furnished.

The resulting satisfaction to the members who have made use of the resources of the Society in this manner has been expressed frequently, and leaves little doubt that, if it were generally known to engineers that such assistance could be had, many would avail themselves of it.

On October 1st, 1916, the Library of the American Society of Civil Engineers ceased to exist as such, and was merged in the Engineering Societies Library, adding 67 000 volumes to the collection, which comprises also the former libraries of the American Institute of Mining

Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, and now has a total of 133 000 volumes and pamphlets. Containing, as the Library now does, the special collections mentioned, its scope is broadened, and, as it receives an unusually large number of technical periodicals, it is well equipped to continue the service formerly rendered by the Society Library.

The Engineering Societies Library offers this service at a cost which is trifling compared with the value of the time of an engineer who personally looks up such matters, and the work can be performed quite as well, and much more quickly, by persons familiar with the Library.

In asking that such work be undertaken, members should specify clearly the subject to be covered, and whether references to general books only are desired, or whether a complete bibliography, involving search through periodical literature, is desired.

It sometimes happens that references are found which are not readily accessible to the person for whom the search is made. In that case the Library is prepared to furnish photographic copies of the material at a small price per page. This method is particularly useful when there are drawings or figures in the text, which would be very expensive to reproduce by hand.

The Library is also able to provide translations of articles in foreign languages when desired.

Requests for searches, copies, translations, etc., should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York City, who will gladly give information concerning the charges for the various kinds of service.

LOCAL ASSOCIATIONS OF MEMBERS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

San Francisco Association, Organized 1905.

E. J. Schneider, President; Nathan A. Bowers, Secretary-Treasurer, 502 Rialto Building, San Francisco, Cal.

The San Francisco Association of Members of the American Society of Civil Engineers holds regular bi-monthly meetings, with banquet, and weekly informal luncheons. The former are held at 6 P. M., at the Engineers' Club, 57 Post Street, on the third Tuesday of February, April, June, August, October, and December, the last being the Annual Meeting of the Association.

Informal luncheons are held at noon, every Wednesday, at the Engineers' Club, where special tables are reserved for members and guests of the Association.

The by-laws of the Association provide for the extension of hospitality to any member of the Society who may be temporarily in San Francisco, and any such member will be gladly welcomed as a guest.

(Abstract of Minutes of Meetings)

October 15th, 1918.—The meeting was called to order at the Engineers' Club; President Newman in the chair; A. T. Parsons, Secretary *pro tem.;* and present, also, 65 members and guests.

Mr. W. L. Huber presented a report from the Committee on Licensing Engineers.* On motion, duly seconded, the report was received and the Chairman was instructed to appoint a committee of three on legislation to represent the Association.

President Newman reported that a committee had been appointed by the Joint Council of San Francisco Engineering Societies, with Mr. C. D. Marx as Chairman, to draft a constitution, and that that organization was already working on the problems of co-operation among the sections.

The subject of the work of the Society's Committee on Development was introduced, and further suggestions for the Association's representative were invited.

After discussion relative to the Association's representative on the Nominating Committee, it was decided, on motion, duly seconded, that the Chairman appoint a committee to ascertain the views of the members as to suitable candidates.

A letter from Capt. E. T. Thurston, Engineers, U. S. A., who is with the American Expeditionary Forces in France, was read.

President Newman presented a suggestion which had been handed in, to the effect that the older and more experienced members should consult with and advise senior students in engineering at Stanford University and the University of California in regard to questions and plans relative to their professional careers. The subject was discussed further by Messrs. Charles Derleth, Jr., and C. E. Grunsky, both of whom endorsed the suggestion.

Maj. Alan R. Cullimore, Sanitary Corps, U. S. A., addressed the meeting on "Rehabilitation Work for Disabled Soldiers".

A paper by Mr. Herman Schussler, entitled "The Copco Dam of the California-Oregon Power Co.", was presented by the author, who illustrated his remarks with lantern slides.

Adjourned.

November 15th, 1918.—The special meeting was called to order at 7.40 P. M.; Mr. C. D. Marx in the chair; Nathan A. Bowers, Secretary; and present, also, 30 members.

The Chairman announced that the meeting had been called for the purposes of discussing the question of the Association's relation to the Draftsmen's Union and the licensing of engineers.

The Secretary presented a preliminary report in which it was stated that the Draftsmen's Union has been in existence in San Francisco for some months, is affiliated with the American Federation of Labor, and is a trade union. Its object is to secure the general adoption in San Francisco of the classification and wage scale established for shipyard draftsmen by the Wage Adjustment Board of the Emergency Fleet Corporation, substitution to be made only in the kind of experience required, and it was pointed out that most of the classifications include men qualified to enter the Society as Juniors.

* See page 6.

The matter had been brought to the attention of the Association by Chas. Warren Hunt, Secretary of the Society, who stated that the matter should be brought before the Board of Direction, and suggested that the Association take it up and report.

The subject was discussed by Messrs. Chew, Hammatt, Rhodin, Huber, Duryea, and Snyder.

On motion, duly seconded, it was decided to appoint a committee of three to draft a license law for civil engineers to be presented to the State Legislature, after receiving the approval of the Association, and that this committee be instructed to ask the San Francisco Sections of National Engineering Societies, through the Joint Council, to join with the Association in framing the bill, in order to broaden its scope and not limit it to civil engineers. (Subsequently, President Newman appointed on this committee Messrs. Snyder, Grunsky, and Dockweiler, with the understanding that it will also fulfill the duties of the Committee on Legislation which it was decided to appoint at the meeting of October 15th).

The subject of the Draftsmen's Union was discussed further by Messrs. Marx, Saph, Tibbetts, Kriegsman, Rhodin, Beebee, Nishkian, McWethy, Squires, Howland, and Rhodes, the discussion being closed by a statement by the Secretary that no action was necessary in regard to this matter, the President having authority to appoint a committee to report to the Secretary of the Society, and that the discussion had brought out the sentiment of those present for the benefit of the Committee, which was all that was desired.

Adjourned.

December 17th, 1918.—The Fourteenth Annual Meeting was called to order at 6 P. M., at the Engineers' Club; President Newman in the chair; N. A. Bowers, Secretary; and present, also, 82 members and guests. Lieut. C. L. Rakestraw, a member of the Association who returned, wounded, after six months' service with the Engineer Corps in France, described the work of the engineer at the front.

The Secretary-Treasurer made a preliminary report for the year, outlining the condition of the finances, and suggesting ways in which the Association could be of greater service to the Profession in the ensuing year. Some of these were: more attention to the social features of regular meetings; publishing the list of members in serial form instead of as an annual booklet; the appointment of several necessary committees to afford the opportunity for working together, so necessary to "getting acquainted on the first name basis."

Mr. Haehl, representative on the Committee on Development, reported in detail the spirit and purpose of the Chicago meeting, and spoke enthusiastically of the prospects for good results from this work, urging that suggestions and constructive ideas be sent in, so that the Committee might have the benefit of co-operation from the entire membership.

Reporting for the Committee on Licensing Engineers, Mr. Snyder announced that the co-operation of other San Francisco sections of National engineering societies had been secured through the Joint Council, and that the final draft of a licensing bill would be ready

soon. It was then voted to hold the special meeting of the Association to approve the bill as soon as copies could be printed and distributed.

President Newman reported that the Joint Council had progressed rapidly in its programme of service to the Profession, and attention was directed particularly to the Service Bureau,* in which the co-operation of the membership is needed in reporting engineering vacancies.

The following officers for 1919 were elected: President, E. J. Schneider; Vice-President, M. M. O'Shaughnessy; Secretary-Treasurer, Nathan A. Bowers.

Maj. George F. Sever, Pacific Coast Representative of the War Industries Board, Power Section, spoke on "Economic and Financial Aspects of the Water Power Situation on the Pacific Coast."

Adjourned.

Colorado Association, Organized 1908.

L. R. Hinman, President; A. N. Miller, Secretary-Treasurer, 1400 West Colfax Avenue, Denver, Colo.

The meetings of the Colorado Association of Members of the American Society of Civil Engineers (Denver, Colo.) are held on the second Saturday of each month, except July and August. The hour and place of meeting are not fixed, but this information will be furnished on application to the Secretary. The meetings are usually preceded by an informal dinner. Members of the American Society of Civil Engineers will be welcomed at these meetings.

Weekly luncheons are held on Wednesday at 12.30 P. M., at Daniels and Fisher's.

Visiting members are urged to attend the meetings and luncheons.

Atlanta Association, Organized 1912.

B. M. Hall, President; Thomas P. Branch, Secretary-Treasurer, Georgia School of Technology, Atlanta, Ga.

Informal luncheons are held for members of the Association on the last Monday of each month, at 12.30 P. M. The place is not fixed, but this information will be furnished on application to the Secretary.

Baltimore Association, Organized 1914.

H. G. Perring, President; Charles J. Tilden, Secretary-Treasurer, The Johns Hopkins University, Baltimore, Md.

Cleveland Association, Organized 1914.

Harry Fuller, President; George H. Tinker, Secretary-Treasurer, 516 Columbia Building, Cleveland, Ohio.

Detroit Association, Organized 1916.

T. A. Leisen, President; Clarence W. Hubbell, Secretary, 2348 Penobscot Building, Detroit, Mich.

The regular meetings of the Association are held on the second Friday of December, April, and October, the last being the Annual Meeting.

* See page 8.

District of Columbia Association, Organized 1916.

A. P. Davis, President; John C. Hoyt, Secretary-Treasurer, U. S. Geological Survey, Washington, D. C.

Duluth Association, Organized 1917.

W. B. Patton, President; Walter G. Zimmermann, Secretary, Wolvin Building, Duluth, Minn.

The regular meetings of the Association are held at noon on the third Monday of each month (usually at the Kitchi Gammi Club), with luncheon, followed by a short business session and the reading of papers. Visiting members of the American Society of Civil Engineers can secure from the Secretary definite information relative to the meetings, at which they will be welcomed. The Annual Meeting is held on the third Monday in May.

Illinois Association, Organized 1916.

A. S. Baldwin, President; Edgar S. Nethercut, Secretary-Treasurer, 1735 Monadnock Blk., Chicago, Ill.

The regular meetings of the Association are held on the second Monday of March, June, September, and December, the last being the Annual Meeting. The hour and place of meeting are not fixed, but this information will be furnished on application to the Secretary.

Louisiana Association, Organized 1914.

Arsène Perrilliat, President; Eugene F. Delery, Secretary, 2007 Laharpe Street, New Orleans, La.

The regular meetings of the Association are held at The Cabildo, New Orleans, La., on the first Monday of January, April, July, and October.

Nebraska Association, Organized 1917.

George L. Campen, President; Homer V. Knouse, Secretary-Treasurer, 109 City Hall, Omaha, Nebr.

Regular meetings of the Association are held on the first Saturday of each month, except July and August, and at such places as may be appointed from time to time by the Executive Committee. The Annual Meeting is held in Lincoln, Nebr., on the second Friday in January.

Visiting members of the Society are especially urged to communicate with the Secretary when in the city.

(Abstract of Minutes of Meetings)

September 7th, 1918.—The meeting was called to order at 8 P. M. at the Blackstone Hotel; President Campen in the chair; Homer V. Knouse, Secretary; and present, also, 4 members.

The meeting was devoted to an informal discussion of matters to come before the Committee on Development. It was decided to submit to the membership the names of Messrs. F. T. Darrow and A. C. Arend as candidates for membership on that Committee, the election to be by letter-ballot.

Adjourned.

November 9th, 1918.—The meeting was called to order at 8.25 P. M. at the Blackstone Hotel; President Campen in the chair; Homer V. Knouse, Secretary; and present, also, 9 members.

The minutes of the two previous meetings were read and approved.

The Secretary reported that a canvass of the letter-ballot to select the Association's representative on the Committee on Development had resulted in the election of Mr. Frank T. Darrow.

There was an informal discussion of matters pertaining to the revision of the Constitution of the State of Nebraska, it being considered desirable to obtain a representation of engineers on the Commission.

The Secretary read a letter from the Southern California Association relating to matters which would come before the Committee on Development. After discussion, on motion, duly seconded, the Association's representative on that Committee was instructed, regarding the attitude of the Association, as follows:

"1.—Advantage should be taken of every facility for teaching the public the utility of the Engineer.

"2.—Advocating the adoption of a uniform license law, to be urged for passage in all States.

"3.—Advocating a register of members, giving an experience record of all members to date; this to be done under the direction of the Local Associations.

"4.—Advocating that a requisite for consideration of an application by the Board of Direction shall be a report from the Local Association, where such applicant is resident within the jurisdiction of a Local Association.

"5.—Advocating a simplified method of expulsion of members.

"6.—Advocating Student Branches.

"7.—Advocating the participation of the Parent Society in matters relating to legislation affecting the Engineer."

On motion, duly seconded, the following were appointed a committee to report, at the next meeting, a draft of desirable bills to be presented at the next session of the Nebraska Legislature: W. Grant, Chairman, G. L. Campen, and A. S. Mirick.

Adjourned.

December 7th, 1918.—The meeting was called to order at 8 P. M. at the Blackstone Hotel; President Campen in the chair; Homer V. Knouse, Secretary; and present, also, 8 members.

The minutes of the meeting of November 9th, 1918, were read and approved.

A letter from Mr. F. T. Darrow, giving an outline of the work of the Committee on Development at its Chicago meeting, was presented by the Secretary, and he was directed to forward a copy to each member of the Association, in order that it might be discussed at the January meeting.

On motion, duly seconded, the Secretary was directed to call the Annual Meeting at Lincoln, Nebr., on January 4th, 1919, instead of on the regular date—the second Friday in January—as members would thereby be enabled to attend the Annual Meeting of the Parent Society, on January 15th and 16th, 1919.

Attention was called to the large number of highway and other internal improvements to be made during the coming two years under the supervision of the State Engineer. As the present salary of this officer is $2 500 per year, which is entirely inadequate to secure the services of an engineer with sufficient experience and executive ability to carry out the work in an efficient and satisfactory manner, it was the sense of the meeting that measures should be taken at once to introduce a bill, at the next session of the Legislature, to raise the salary to $5 000.

On motion, duly seconded, Messrs. Bruce and Knouse were appointed a Committee to draft a resolution, to be addressed to the Governor-elect, requesting him to defer the appointment of the State Engineer until time had been given for Legislative action which would increase the salary of that officer to a figure commensurate with the duties of the office.

The following nominations of officers for 1919 were made: President, Adna Dobson; Senior Vice-President, Clark E. Mickey, John A. Bruce, Junior Vice-President, A. C. Arend, C. Lewis Meyer; Secretary-Treasurer, Homer V. Knouse.

Matters pertaining to the forthcoming Constitutional Convention of the State of Nebraska were discussed, and it was agreed that a representation of engineers in this convention was desirable and that measures should be taken at the proper time to see that a number of engineers file their names as candidates for this election.

Adjourned.

Northwestern Association, Organized 1914.

Ralph D. Thomas, President; W. N. Jones, Secretary, City Engineer's Office, City Hall, Minneapolis, Minn.

The meetings of the Association are held bi-monthly, alternating between St. Paul and Minneapolis, on the third Friday of each month. Information as to the time and place of such meetings will be furnished on application to the Secretary.

Philadelphia Association, Organized 1913.

F. Herbert Snow, President; Henry T. Shelley, Secretary, 416 City Hall, Philadelphia, Pa.

The regular meetings of the Association are held at the Engineers' Club of Philadelphia, 1317 Spruce Street, on the first Monday in January, April, and October, the last being the Annual Meeting.

(Abstract of Minutes of Meeting)

December 2d, 1918.—A special meeting of the Board of Directors was called to order at the Engineers' Club, at 8.15 P. M.; President Snow in the chair; H. T. Shelley, Secretary; and present, also, 5 members.

The Secretary read a communication from President Snow.*

After some discussion, the Secretary was directed, on motion, duly seconded, to forward a copy of the President's letter to Mr. Wager Fisher, with the request that it be published in the *Journal* of the Engineers' Club.

* See page 11.

The Secretary was also directed to extend an invitation to Messrs. Hansel and Humphrey, as well as the President of the Pittsburgh Association, to attend the meeting of the Association to be held on the evening of January 6th, 1919, and to communicate with Mr. Calvin W. Rice, Secretary of the American Society of Mechanical Engineers, in regard to having him speak at the same meeting.

Adjourned.

Pittsburgh Association, Organized 1917.

Robert A. Cummings, President; Nathan Schein, Secretary-Treasurer, 1510 Carson St., Pittsburgh, Pa.

The Annual Meeting of the Association is held on the first Monday in October. The time and place of other meetings are not fixed, but this information will be furnished on application to the Secretary.

(Abstract of Minutes of Meeting)

December 10th, 1918.—The Annual Meeting which had been postponed from October 7th, 1918, on account of the influenza epidemic, was called to order at the Hotel Chatham at 7:45 P. M.; President Khuen in the chair; J. D. Stevenson, Secretary; and present, also, 45 members.

The minutes of the previous meeting were read and approved.

President Khuen stated the purpose of the meeting, namely, to elect officers for 1919 and to discuss the Preliminary Report of the Committee on Development.

The following officers were elected; President, Robert A. Cummings; Vice-President, Morris Knowles; and Secretary-Treasurer, Nathan Schein.

Mr. Cummings, the local member of the Committee on Development, opened the discussion on the Preliminary Report of that Committee. He was followed by Messrs. Khuen, Morris Knowles, E. K. Morse, William E. Mott, W. A. Weldin, N. S. Sprague, and Paul L. Wolfel.

An address on the status of the engineer in Pennsylvania and the legal attempts at licensing engineers and the participation of engineers in the formation of laws dealing with engineering problems, was presented by Dr. F. H. Snow, President of the Philadelphia Association.

On motion, duly seconded, the President was directed to appoint four committees, corresponding to those created by the Committee on Development, which committees shall formulate views and report to the local member of the Committee on Development.

The following Committees and Chairmen were subsequently appointed: Technical Activities, Morris Knowles; Internal Relations and Local Associations, Richard Khuen, Jr.; External Relations with the Engineering Profession, Paul L. Wolfel; and Relations to Public Affairs, N. S. Sprague.

Adjourned.

Portland, Ore., Association, Organized 1913.

Philip H. Dater, President; C. P. Keyser, Secretary, 318 City Hall, Portland, Ore.

St. Louis Association, Organized 1888 (Constitution Approved by Board, 1914).

J. A. Ockerson, President; C. M. Daily, Secretary-Treasurer, 4240 Shaw Avenue, St. Louis, Mo.

The Annual Meeting of the Association, for the election of officers and for the transaction of business, is held on the fourth Monday in November. Two meetings each year, for the presentation and discussion of technical papers, are held in the Auditorium of the Engineers Club of St. Louis and are open to members of the Associated Societies. Other "get-together" meetings are held regularly for dinner or luncheon on the fourth Monday of each month except July, August, and November.

San Diego Association, Organized 1915.

N. B. Kellogg, President; P. R. Watson, Secretary-Treasurer, *pro tem.*, County Engineer's Office, San Diego, Cal.

Seattle Association, Organized 1913.

A. S. Downey, President; Phil. A. Franklin, Secretary, 1409 East 65th St., Seattle, Wash.

The regular monthly meetings and luncheons of the Association are held at the Frye Hotel, 3d Avenue and Yesler Way, at 12.15 P. M., on the last Monday of each month. All members, in any grade, of the American Society of Civil Engineers are cordially invited to attend the meetings when in the vicinity.

Southern California Association, Organized 1914.

George G. Anderson, President; Floyd G. Dessery, Secretary, 511 Central Building, Los Angeles, Cal.

The Southern California Association of Members of the American Society of Civil Engineers (Los Angeles, Cal.) holds regular bi-monthly meetings on the second Wednesday of February, April, June, August, October, and December, the last being the Annual Meeting.

Informal luncheons are held at 12:15 P. M., every Thursday, and the place of meeting may be ascertained from the Secretary.

The by-laws of the Association provide for the extension of hospitality to any member of the Society who may be temporarily in Los Angeles, and any such member will be gladly welcomed as a guest at any of the meetings or luncheons.

Spokane Association, Organized 1914.

Peter Mogensen, President; Charles E. Davis, Secretary, City Engineer's Office, Spokane, Wash.

The regular meetings of the Association are held on the second Friday of each month, except July and August. The hour and place of meeting are not fixed, but this information will be furnished on application to the Secretary.

Visiting members are invited to attend the meetings.

Texas Association, Organized 1913.

R. C. Gowdy, President; J. H. Brillhart, Secretary, Care, Mosher Mfg. Co., Dallas, Tex.

Utah Association, Organized 1916.

A. B. Villadsen, President, 304 Dooly Block, Salt Lake City, Utah. The Annual Meeting of the Association is held on the first Wednesday in April. The time of other meetings is not fixed, but this information will be furnished on application to the President.

PRIVILEGES OF ENGINEERING SOCIETIES EXTENDED TO MEMBERS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

Members of the American Society of Civil Engineers will be welcomed by the following Engineering Societies, both to the use of their Reading Rooms, and at all meetings:

American Institute of Electrical Engineers, 25 West Thirty-ninth Street, New York City.

American Institute of Mining Engineers, 25 West Thirty-ninth Street, New York City.

American Society of Mechanical Engineers, 25 West Thirty-ninth Street, New York City.

Asociación de Ingenieros y Arquitectos de Mexico, Avenida Juarez, 12, City of Mexico, Mexico.

Assoçiacão dos Engenheiros Civis Portuguezes, Lisbon, Portugal.

Australasian Institute of Mining Engineers, Melbourne, Victoria, Australia.

Boston Society of Civil Engineers, 715 Tremont Temple, Boston, Mass.

Brooklyn Engineers' Club, 117 Remsen Street, Brooklyn, N. Y.

Civil Engineers' Society of St. Paul, Public Library, St. Paul, Minn.

Cleveland Engineering Society, Chamber of Commerce Building, Cleveland, Ohio.

Cleveland Institute of Engineers, Middlesbrough, England.

Dansk Ingeniorforening, Amaliegade 38, Copenhagen, Denmark.

Detroit Engineering Society, Detroit Board of Commerce Building, Detroit, Mich.

Engineering Association of Nashville, Commercial Club Building, Nashville, Tenn.

Engineering Association of New South Wales, 5 Elizabeth Street, Sydney, New South Wales, Australia.

Engineering Institute of Canada, 176 Mansfield Street, Montreal, Que., Canada.

Engineering Societies Club of Hawaii, E. F. Cykler, Secretary, Honolulu, Hawaii.

Engineers and Architects Association of Southern California, 405 Hosfield Bldg., Los Angeles, Cal.

Engineers and Architects Club of Louisville, 1412 Starks Building, Louisville, Ky.

Engineers' Club of Baltimore, 6 West Eager Street, Baltimore, Md.

Engineers' Club of Kansas City, Robert S. Beard, Secretary, Third Floor, City Hall, Kansas City, Mo.

Engineers' Club of Minneapolis, 17 South Sixth Street, Minneapolis, Minn.

Engineers' Club of Philadelphia, 1317 Spruce Street, Philadelphia, Pa.

Engineers' Club of St. Louis, 3817 Olive Street, St. Louis, Mo.

Engineers' Club of Toronto, 96 King Street, West, Toronto, Ont., Canada.

Engineers' Club of Trenton, Trent Theatre Building, 12 North Warren Street, Trenton, N. J.

Engineers' Society of Northeastern Pennsylvania, 415 Washington Avenue, Scranton, Pa.

Engineers' Society of Pennsylvania, 31 South Front Street, Harrisburg, Pa.

Engineers' Society of Western Pennsylvania, 568 Union Arcade Building, Pittsburgh, Pa.

Florida Engineering Society, J. R. Benton, Secretary, Gainesville, Fla.

Institute of Marine Engineers, The Minories, Tower Hill, London, E., England.

Institution of Civil Engineers, Great George Street, Westminster, S. W., London, England.

Institution of Engineers of the River Plate, Calle 25 de Mayo 195, Buenos Aires, Argentine Republic.

Institution of Mechanical Engineers, 11 Great George Street, London, S. W. 1, England.

Institution of Naval Architects, 5 Adelphi Terrace, London, W. C., England.

Junior Institution of Engineers, 39 Victoria Street, Westminster, S. W., London, England.

Koninklijk Instituut van Ingenieurs, The Hague, The Netherlands.

Louisiana Engineering Society, State Museum Building, Chartres and St. Ann Streets, New Orleans, La.

Memphis Engineers' Club, Memphis, Tenn.

Midland Institute of Mining, Civil and Mechanical Engineers, Sheffield, England.

Montana Society of Engineers, Butte, Mont.

North of England Institute of Mining and Mechanical Engineers, Newcastle-upon-Tyne, England.

Oregon Society of Civil Engineers, Portland, Ore.

Pacific Northwest Society of Engineers, 803 Central Building, Seattle, Wash.

Rochester Engineering Society, Rochester, N. Y.

Sociedad Colombiana de Ingenieros, Bogota, Colombia.

Sociedad de Ingenieros del Peru, Lima, Peru.

Societe des Ingenieurs Civils de France, 19 rue Blanche, Paris, France.

Society of Engineers, 17 Victoria Street, Westminster, S. W., London, England.

Southwestern Society of Engineers, C. E. Barglebaugh, Secretary, 703 First National Bank Building, El Paso, Tex.

Svenska Teknologforeningen, Brunkebergstorg 18, Stockholm, Sweden.

Tekniske Forening, Vestre Boulevard 18-1, Copenhagen, Denmark.

Vermont Society of Engineers, George A. Reed, Secretary, Montpelier, Vt.

Western Society of Engineers, 1735 Monadnock Block, Chicago, Ill.

ANNUAL REPORT OF THE BOARD OF DIRECTION FOR THE YEAR ENDING DECEMBER 31st, 1918.

In compliance with the Constitution, the Board of Direction presents its report for the year ending December 31st, 1918:

MEMBERSHIP

The changes in membership are shown in the following table:

	Jan. 1st, 1918.			Jan. 1st, 1919.			Losses.				Additions.		Totals.		
	Resident.	Non-Resident.	Total.	Resident.	Non-Resident.	Total.	Transfer.	Resignation.	Dropped.	Death.	Transfer.	Election.	Loss.	Gain.	Increase.
Honorary Members.	.....	3	3	.....	3	3	....	..	..	..	.....	.....	.....	.....	...
Corresponding "	.....	1	1	.....	1	1	....	..	..	..	.....	.....	.....	.....	...
Members	711	2 946	3 657	688	3 094	3 782	....	11	2	61	*115	‖84	74	199	125
Associate Members.	633	3 467	4 100	612	3 768	4 380	111	22	7	39	†93	¶366	179	459	280
Associates	58	107	165	61	104	165	4	3	1	1	‡1	8	9	9	...
Juniors	111	542	653	110	482	592	94	8	30	8	.....	79	140	79	§61
Fellows	4	7	11	.....	10	10	....	..	1	..	.....	.....	1	....	§1
Totals	1 517	7 073	8 590	1 471	7 462	8 933	209	44	41	109	209	537	403	746	343

* 111 Associate Members, 2 Associates, 2 Juniors.
† 2 Associates, 91 Juniors.
‡ 1 Junior.
‖ 2 Reinstatements.
¶ 3 Reinstatements.
§ Decrease.

Although the net increase in membership for the year, 343, is not nearly as large as in some previous years, it should be noted that the loss by death has been much greater than heretofore, and it seems remarkable that, in view of all the conditions of the war, the total number of applications received has been 844: 614 for admission and 230 for transfer.

The losses by death during the year number 109, and are as follows:

Members (61): James Murray Africa, Calvin Harlow Allen, Thomas Aspinwall, Alonzo Clarence Bell, Augustus Jesse Bowie, William Bradford, Charles Otto Brown, Andrew Bryson, Herbert James Chambers, Howard Lincoln Coburn, Clarence Coleman, William Williams Crehore, James Aubrey Davenport, John Sterling Deans, Charles Webster Gay, James Currie Hallock, William Joseph Hardee, James Hayward Harlow, William Ryan Hill, Oliver Zell Howard, William Huggins, Julius Lilien Jacobs, George Alexander Just, Cassius William Kelly,

Clarence Booth Lamont, Hermann Laub, Charles Arthur Lindbery, Jesse Lowe, William Anthony Lydon, Robert Emmet McMath, Edgar Marburg, William McKelvey Marple, Alfred Boardman Mayhew, William Augustus Moncure, Augustus Mordecai, Charles John Augustus Morris, Henry Prentice Morrison, Emory Washburn Muenscher, Clarence Rufus Neher, Alexander Joseph Norris, Stacy Brown Opdyke, Jr., Logan Waller Page, Myron Hall Peck, John Howe Peyton, Edmund Moore Rhett, Marshall Pope Robertson, Albert Alonzo Robinson, John Warren Sackett, Harry Sidenius, Willis Roswell Smith, Otto Sonne, Edwin Augustus Stevens, Arnold Henry Sutermeister, John Dash Van Buren, Clarence Browning Vorce, Bernard Matthew Wagner, Leslie Abram Waterbury, John Waterhouse, Frederick William Watkins, Elliott Hinckley Wilson, Augustine Washington Wright.

Associate Members (39): Edgar Harold Annear, Robert Stuart Armstrong, William Blair Bovyer, Harris Daniel Buckwalter, Thomas Francis Curran, Robert Edward Dakin, Stanley Dean, John Hull Decker, Clarence Frederick Eberly, Albert Francis Geiger, Charles Henry Howard Gillean, James Gordon Goodfellow, Edward McKim Hagar, William Hague, Bruce Ritchie Honeyman, Guy Vincent McClure, Hunter McClure, William Menke, Ogden Merrill, Adelbert Philo Mills, James Powell Murray, John Bonaventure Murray, William Arthur O'Brien, Harold Coe Ogden, Edwin James Potter, Carey Simon Pratt, Clarence J. Rannells, Ward Hall Ream, Harold August Hastrup Schultz, George Corliss See, Robert Earle Shipley, Edgar Field Smith, Plumer Henry Smith, Austin Russell Willard Sperry, Clark Wallace Thompson, Warren William Upson, Harry Arthur Weeks, Fred Elmer Wilcox, James Wilson.

Associates (1): Rutledge Irving Odell.

Juniors (8): Edward Porter Alexander, Jay Cassius Canney, Ernest Charles Dedicke, Donald Power Denham, Richard Jeter Palmer, Jr., Frederic Borradaile Prichett, Kirby Baldwin Sleppy, Clifton L'Orignal Weekes.

LIBRARY AND READING ROOM

Previous reports of the Board have stated that the Library had been under the management of the United Engineering Society Library Board since October 1st, 1916, and that the movement of the 67 000 volumes—of which there were no duplicates in the Engineering Societies Library—had been completed in February, 1917, and placed temporarily on the shelves of the Engineering Societies Library, and were available for use exactly as they had been heretofore in our old house: That the book stacks belonging to the Society, donated to the United Engineering Society, had been dismantled and erected in the new Stack Room on the fourteenth floor, immediately below the new quarters of the Society.

The books have now been moved, and are a part of the general Engineering Societies Library.

Our present Reading Room, being on the fifteenth floor, immediately over the Stack Room of the Library, and only two floors above the Joint Reading Room, makes it possible for members and others to use the general Library from this room, through our own attendant librarians. In addition to this we maintain a collection of new books in our Reading Room, and, during the year, the experiment has also been tried of placing on our reading tables, in addition to some 300 current technical periodicals, a number of the best known non-technical magazines, such as "World's Work", "Literary Digest", and "North American Review", for the use of visitors, and it may be said that these are apparently quite as much in demand as the periodicals of a strictly technical character.

Facilities for carrying on correspondence, and for the receipt of mail for non-residents visiting the city, are furnished, and the use of the Reading Room as a place of meeting for social or business purposes, and as a bureau for securing local information has been encouraged. On the Bulletin Board in this room may be found items of current interest, and the Register which is maintained is a valuable source of reference to out-of-town members, especially in looking up friends.

As was perhaps quite natural when Headquarters were moved from our old house to this building, the attendance in the Reading Room fell off, not only on account of the change of Headquarters, but on account of war conditions, but the total attendance in the Reading Room during 1918, though slightly less, compares favorably with that of 1916, and has been 23% greater than in 1917. The increase in attendance has been specially noticeable during the last two months.

COMMITTEES

There are at present four Special Committees appointed to report on Engineering subjects, namely: Engineering Education; To Codify Present Practice on the Bearing Value of Soils for Foundations; Regulation of Water Rights; and Stresses in Railroad Track. Progress Reports from three of these Committees are expected, and the Committee on Engineering Education is expected to present its Final Report to the Annual Meeting.

In connection with the activities of the Society, the Board of Direction has appointed three new Committees:

(1) A Committee on Development of the American Society of Civil Engineers, consisting of one member appointed by each of the 22 Local Associations of Members, and seven members at large appointed by the President. This method of selection was determined upon by the Board in order that this Committee should represent the geographically widely separated membership of the Society. Under instruction of the

Board, the President prepared a Precept for the guidance of this Committee, and a meeting was held in Chicago, November 14th to 16th, inclusive, 1918. The Preliminary Report, issued to the membership on December 6th, has been printed in the December *Proceedings*, and will come before the Annual Meeting for discussion.

(2) A New York Meetings Committee, with authority to arrange for the second meeting in each month.

(3) A Committee of its own members "to keep itself and the Board of Direction informed of any Governmental or other programme looking to reconstruction or rehabilitation of the Engineering resources of the country after the war." A report from this Committee was recently issued for the information of the Membership.

DELEGATION TO VISIT FRANCE

An invitation from the Engineers of France, issued with the approval of the French Ministries of Public Works, of Commerce, and of Armament, to this Society, was received in November, asking it to undertake the sending of a Delegation of representative American Engineers to take part in a joint Engineering Congress to be held in Paris in December, 1918, for the purpose of discussing technical matters pertinent to reconstruction work in France and the development of its industries. The Society replied that it would be glad to undertake the formation of such a Delegation with the co-operation of the other National Engineering Societies, and nine Engineers were appointed, six by this Society, and one each by the American Institute of Mining Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, and the Delegation, accredited to the American Ambassador in France, sailed on December 5th, 1918.

The personnel of each of the Committees above referred to has been already published in *Proceedings*.

ENGINEERING SOCIETIES EMPLOYMENT BUREAU

Upon the initiative of your Board, the other Founder Societies concurring, an Employment Bureau, reporting to Engineering Council, has been established under the management of the Secretaries of the four Societies. One of the purposes of the Bureau is to keep in touch with all engineering firms, with a view of supplying them with desirable men.

Plans are now under way to assist in placing men who are retiring from Government Service.

The Bureau is not intended to be exclusively for the benefit of members of the Founder Societies; non-members who are introduced properly will also be registered.

PUBLICATIONS

During the year, ten numbers of *Proceedings*, one volume of *Transactions*, and one Year Book have been issued.

In *Proceedings* the list of references to current engineering literature has been continued, and has covered 100 pages and contained 4 416 classified references to 86 periodicals. The number of periodicals covered by this list has been reduced materially, due to war conditions.

The stock of the various publications of the Society, kept on hand for the convenience of members and others, now amounts to 155 761 copies, the cost of which to the Society, for paper and press work only, has been $23 722.30.

During the year 5 891 volumes of *Transactions* have been bound for members and others in standard half-morocco and cloth bindings.

SUMMARY OF PUBLICATIONS FOR 1918.

	Issues.	Average edition.	Total pages.	Plates.	Cuts.
Proceedings (monthly numbers)	10	8 950	2 341	3	353
Transactions, Vol. LXXXI	1	8 700	1 879	17	363
Year Book	1	9 250	391	1	...
Total	12	....	4 611	21	716

The cost of publications has been:	
For Paper, Printing, etc., *Proceedings* and *Transactions*	$32 242.31
For Plates and Cuts	1 192.20
For Boxes, Copyright, and Sundry Expenses	351.13
For 13 137 Extra Copies of Papers and Memoirs	1 368.38
For Year Book	3 713.42
Total	$38 867.44
Deduct amount received from sale of publications	3 516.75
Net expenditure for publications for 1918	$35 350.69

Vol. LXXXI, which was published as stated during this year, was really the volume of *Transactions* for the year 1917, which, due to the movement of Society Headquarters, it was not possible to issue during that year, and the issue of Vol. LXXXII, which is the volume for the current year, has also been delayed, but will be out early in 1919. The edition of this volume will be 9 000; it will contain 1 775 pages, with 48 inserted plates, and 610 cuts. A payment of $5 000 on account has been made to the printer, and appears in the financial statement.

Early in October the Board decided that no volume of *Transactions* should be issued for the year 1919, and that the number of technical papers and discussions to be published in *Proceedings* be left to the discretion of the Committee on Publications. This Committee subsequently deemed it wise, as a war measure, to abandon the publication of all technical matter temporarily. This decision was arrived at, as has already been stated to the membership: First, on account of the fact that the Government had ordered the conservation of paper in every way possible, having gone so far as to prohibit the issue of exchanges and free copies of periodicals; second, that the cost of paper had increased almost 100%, and that it is at the present time impossible to obtain the imported Bible paper which has been used in the volumes of *Transactions;* third, that practically 25% of the entire membership of the Society was either serving in the Armies or Navies of the United States and its Allies, or was engaged in work in connection with the war, and therefore was too busy to discuss, or perhaps even to read, technical papers. It was not believed that this necessary temporary abandonment of the publication of valuable technical papers would detract from their ultimate usefulness, especially because, when the publication of these papers is resumed, many of the members now engrossed in war work will be able to read and discuss them; fourth, that a careful financial estimate showed that, on the basis of continuing the activities of the Society on the same scale as heretofore, there would be a large deficit at the end of the year, and therefore that there was great necessity for economy.

It is the intention to resume the publications in the usual way at the earliest possible moment.

MEETINGS

Twenty meetings were held during the year, as follows; At the Annual Meeting 2; and 18 other meetings, all of which were held at Society Headquarters in the Engineering Societies Building.

At these meetings there were presented 7 formal papers, 4 of which were illustrated with lantern slides, and 15 lectures and addresses, 11 of which were illustrated with lantern slides and moving pictures. The number of members and others who took part in the preparation and discussion of these papers, lectures, and addresses was 72.

The Annual Convention was abandoned on account of war conditions.

The total attendance at the 20 meetings was about 1 924. The registered attendance at the Annual Meeting was 750, but this does not include many members and guests present who failed to register.

Two special meetings are included in the figures given above.

The meeting of April 17th, 1918, was devoted to a meeting of the John Fritz Medal Board of Award for the Public Presentation of that

Medal to J. Waldo Smith, M. Am. Soc. C. E., for "achievement as Engineer in providing the City of New York with a supply of water." At this meeting addresses were made by Col. John J. Carty, Past-President, Am. Inst. E. E., and Chairman of the John Fritz Medal Board of Award, who presented the medal, and by Messrs. A. T. Clearwater, Ambrose Swasey, and J. Waldo Smith.

On November 20th, 1918, a Joint Meeting of the American Society of Civil Engineers, the American Institute of Mining Engineers, and the American Society of Mechanical Engineers was held, at which addresses were made by Mr. Albert C. Ritchie, Counsel of the War Industries Board, Capt. E. Dulieux of the French High Commission, and Julius Kahn, M. Am. Soc. C. E., the subject being, "The Demand for and the Conservation of Steel."

In the absence of regularly scheduled technical papers, the following topics have been presented, all illustrated by lantern slides:

Jan. 17, 1918, "Topographic Features of the Terrain of Northern and Northeastern France, with Their Influence on the Strategy of the War", by Douglas W. Johnson.

Feb. 20, 1918, "Construction of Camp Devens, Ayer, Mass.", by V. T. Goggin.

Mar. 20, 1918, "Drainage Problems", by C. F. Brown.

Apr. 3, 1918, "Emergency Construction Work Due to War Conditions", by George W. Fuller.

May 15, 1918, "The Guatemala Earthquake", letters from Sumner F. Shaw, presented by Chas. Warren Hunt.

June 5, 1918, "Hog Island, the Greatest Shipyard in the World", by W. H. Blood, Jr.

Sept. 4, 1918, "The Military Operations of 1918", by J. de B. W. Gardiner.

Sept. 18, 1918, "Building of Boston Army Supply Base", by Chas. H. Gow, S. Ross Berkowitz, and A. A. Cohill.

Oct. 2, 1918, "War Experiences", by Corporal Oscar Mouvet, French Legionnaire; and "Some Present Problems of a Consulting Engineer above the Draft Age, with Suggestions as to Preparedness for Peace as well as for War", by T. Kennard Thomson.

Oct. 16, 1918, "The Eleventh Engineers in France", by C. Raymond Hulsart.

Nov. 6, 1918, "The Aerial Mail Service", by Charles N. Kight; and "A Trip to Germany by the Air Route", by G. Douglas Wardrop.

Dec. 6, 1918, "Personal Recollections of War Operations on Inland Waterways", by J. H. H. Muirhead.

Dec. 18, 1918, "Sewage and Wastes Disposal for the United States Army", by Leonard S. Doten.

As stated in a previous Report of the Board, the Society occupies the entire fifteenth floor of the Engineering Societies Building, and about two-thirds of the sixteenth floor, a large part of the latter consisting of two Committee rooms and one office room. The National Americanization Committee, U. S. Department of the Interior, has been occupying the remaining three rooms on this floor, and, due to war conditions, needed additional accommodation, and, since June 1st, 1918, two of the committee rooms have been given up for this purpose, the Society receiving exactly what it pays for the use of these rooms. This has necessitated a temporary rearrangement of the office force, but it is expected that it will not continue after July 1st, 1919.

The larger of our committee rooms, known as the Past-Presidents' Room, on account of the collection of portraits of Past-Presidents of the Society hung there, has been in considerable demand, and its use has been freely given to our associated activities. The large Board Room on the fifteenth floor has also been used on several special occasions for meetings of other organizations.

In all, these rooms have been used, in addition to their use by the Board of Direction and by Committees of this Society, by other organizations for 113 meetings as follows:

The Board Room:

By U. E. S. Board of Trustees	11
" Americanization Committee	5
" Naval Consulting Board	2
" Engineering Council	2
" National Research Council, Engineering Division	1—Total 21

The Past-Presidents' Room:

By National Americanization Committee	71
" Engineering Council	8
" American Society for Testing Materials Committee D-4	3
" National Research Council (Committee Meetings)	4
" American Society of Mechanical Engineers (Committee Meetings)	4
" War Department, Committee on Education and Special Training	1
" National Pipe Screw Thread Committee	1—Total 92

MEDALS AND PRIZES

For the year ending with July, 1917, prizes were awarded as follows:

The Norman Medal to Benjamin F. Groat, M. Am. Soc. C. E., for his paper entitled, "Chemi-Hydrometry and Its Application to the Precise Testing of Hydro-Electric Generators".

The J. James R. Croes Medal to Henry S. Prichard, M. Am. Soc. C. E., for his paper entitled, "The Effects of Straining Structural Steel and Wrought Iron".

The Thomas Fitch Rowland Prize to John Vipond Davies, M. Am. Soc. C. E., for his paper entitled, "The Astoria Tunnel Under the East River for Gas Distribution in New York City".

The James Laurie Prize, to H. R. Stanford, M. Am. Soc. C. E., for his paper entitled, "Pearl Harbor Dry Dock".

The Collingwood Prize for Juniors to Clement E. Chase, Jun. Am. Soc. C. E., for his paper entitled, "The Cherry Street Bridge, Toledo, Ohio".

SOCIETY PROPERTY

In the last Report of the Board it was stated that the Fifty-seventh Street Society House had been donated to the use of the National Food Administration, and to the Food Administration of the State of New York. The building was occupied by the Food Administration from December 7th, 1917, to August 1st, 1918, at which time a contract had been entered into with the Ajax Rubber Tire Corporation for leasing the property. This contract necessitated extensive alterations in the building. In order to make the building available for commercial purposes, the first floor had to be lowered to the level of the sidewalk, an elevator installed, and many other minor changes made. All these improvements have been finished, and the tenant has been in occupancy of the building since December 15th, 1918. Figures as to the cost of the alterations, terms of lease, etc., will be found under the heading of Finances.

FINANCES

In the last Report of the Board it was stated that the cost to this Society of the building of the three additional stories to the United Engineering Societies Building had been $262 500, and that, in order to secure the necessary money, a mortgage debt of $150 000 had been incurred, the balance, $112 500, having been paid out of reserve and current funds.

Although the budget of operating expenses adopted by the Board at the beginning of the year has not been exceeded, the year has been a difficult one financially for the Society, due to many causes.

Perhaps a brief historical statement of the general financial condition of the Society would be of interest. In 1896 the total available assets of the Society were about $60 000. It then occupied a private dwelling, No. 127 East 23d Street, in which it had an equity. A plot of 50-ft. frontage on West 57th Street, between Seventh Avenue and Broadway, was purchased for $80 000, and a house erected thereon. About eight years later an additional 25-ft. adjoining lot was purchased,

at a cost of $100 000, and built upon, thus enlarging the property of the Society by 50 per cent. This property, with a frontage of 75 ft. on 57th Street and an average depth of 113 ft., cost the Society in all $360 000. The land has increased considerably in value since that time.

In 1916 this property was entirely free from debt, and, in addition to this, on September 1st, 1916, the assets of the Society in cash on hand and invested in bonds amounted to upwards of $90 000.

It will be seen from this that in twenty years, in addition to carrying on the work of the Society, there had been saved from the income about $390 000, the average amount of saving per annum being a little less than $20 000.

Although this was undoubtedly a good financial record, it should be pointed out that it unfortunately resulted in a general feeling that the Society possessed great wealth, whereas careful analysis will show that the saving of a sum of $20 000 a year, as the result of careful economy, is not a sufficient margin to warrant that assumption.

At or about this time the invitation of the other National Societies, that we should join them in the Engineering Societies Building, was received and accepted by the Society by a large majority.

The present financial condition of the Society is the result of several factors:

(1) That, even under normal conditions, the annual cost to the Society of our present somewhat smaller quarters is greater than it was in the Fifty-seventh Street house. In addition to this, co-operation in the Joint Library and Engineering Council increases our Annual Expense by at least $5 000.

(2) That war conditions made it impossible to realize any immediate return, either by sale or rental of the 57th Street property of the Society.

(3) That the remission of the dues of a large number of members in the active service of the country in the Army and Navy materially reduced the Society's income.

(4) That the cost to the Society of the three additional stories to the Engineering Societies Building was more than $40 000 greater than had been estimated, or could have been anticipated, and that this amount was taken from income-producing assets.

(5) That the cost of alterations of the 57th Street building, $68 000, was met partly by mortgage, and that the balance, $18 000, has to be paid from current funds.

A general estimate of the additional burden due to these unexpected conditions, leaving out entirely Item 1, would be loss of expected revenue from the 57th Street property for more than a year, $22 500; remission of dues, estimated loss, $15 000; unexpected additional cost of addition to 39th Street building, $42 500; amount to be paid from

current funds on account of alterations to 57th Street building, $18 000 —Total, $98 000.

From the foregoing it will be seen that it was essential that every effort should be made in order that expenditures should not exceed receipts by too large a margin.

Notwithstanding this effort, during the autumn of this year, it became necessary to borrow money temporarily to meet our ordinary expenses and pay-roll, in addition to the $200 000 mortgage on the Fifty-seventh Street property of the Society, and it may be said that if all the bills incurred during 1918 had had to be paid by December 31st, our books would have shown a deficit of more than $20 000.

It became necessary, in order to derive any revenue from the Fifty-seventh Street property, to alter it into a commercial building, and in July, 1918, a contract was entered into with a tenant for a 10-year lease, based upon the expenditure by the Society of about $68 000 for the alteration of the building. The lease is to run for ten years, and the Society will receive 5% on its entire original outlay ($360 000) or $18 000, plus 7% on the total cost of alterations, approximately $4 750, or approximately a total annual rental of $22 750; this rental to be net, the tenant assuming payment of all taxes, assessments, repairs, insurance, etc., etc. The present mortgage on the building being $200 000 at 6% per annum, the total net revenue which the Society will derive for the next ten years on this building will be a little less than $11 000 per annum.

The reports of the Secretary and Treasurer are appended hereto.

The Board records with deep regret the death of William Ryan Hill, Director representing District No. 3, on June 16th, 1918. John Adam O'Connor was appointed by the Board on October 8th, 1918, to fill the unexpired term.

George W. Goethals, who was elected a Director on January 16th, 1918, resigned, and E. J. Fort was appointed by the Board on April 16th, 1918, to fill the unexpired term.

This report should not conclude without recording that eighteen of our members have given their lives to their Country. They are:

Augustus Waterous Agnew, Capt., 3d Canadian Pioneers.
Edward Porter Alexander, 1st Lieut., Engineers, U. S. A.
Edgar Harold Annear, Capt., Engineers, U. S. A.
Harris Daniel Buckwalter, Capt., Engineers, U. S. A.
Stanley Dean, Capt., Quartermaster Corps, U. S. A.
Ernest Charles Dedicke, 1st Lieut., U. S. A.
James Gordon Goodfellow, Maj., Royal Engineers.
William Hague, 1st Lieut., Engineers, U. S. A.
Bruce Ritchie Honeyman, Capt., Engineers, U. S. A.
Charles Arthur Lindbery, Capt., Engineers, U. S. A.

Hunter McClure, 1st Lieut., Engineers, U. S. A.
Adelbert Philo Mills, Capt., Engineers, U. S. A.
James Powell Murray, Capt., Engineers, U. S. A.
Myron Hall Peck, Capt., Engineers, U. S. A.
Frederic Borradaile Prichett, Lieut., Field Artillery, U. S. A.
Ward Hall Ream, 1st Lieut., Engineers, U. S. A.
Kirby Baldwin Sleppy, Capt., Engineers, U. S. A.
George Edward Vansittart, Maj., Canadian Field Artillery.

By order of the Board of Direction.

CHAS. WARREN HUNT,
Secretary.

GENERAL BALANCE SHEET, DECEMBER 31ST, 1918.

ACCOMPANYING REPORT OF THE SECRETARY.

ASSETS.		
*Three Lots (actual cost $185 406.20) Estimated Value		$350 000.00
*Building (cost, less 2% annually for depreciation)		180 346.14
New Society Headquarters		5 100.00
Furniture		59 617.73
Publications on hand (inventoried cost)		23 722.30
New York City non-taxable 4½% bonds		10 300.00
Interest accrued on Investment		141.67
Library: Cash expended for books, etc.	$22 122.22	
Donations (estimated)	72 310.83	94 433.05
†Equity in U. E. S. Building		486 792.79
Alfred Noble Memorial (Loan)		1 200.00
Advance payment to Printer on account		3 030.74
Rent Receivable from National Americanization Committee		186.65
Due from Members		18 445.40
Due from Non-Members		728.37
Cash		31 846.75
		$1 265 891.59

LIABILITIES.	
Dues for 1919 paid in advance	$30 054.76
Mortgage Debt	200 000.00
Interest accrued on Mortgage	2 900.00
Funds invested in Society House, Lots and Library‡	28 590.78
Herbert Steward Library Fund	2 060.00
Joseph G. Swift Library Fund	1 030.00
Balance of Donation on account of work of Special Committees	3 214.64
Advance payment on acct. of Rental (220 W. 57th St.)	16 750.00
Balance on Builders' Contract a/c Alterations (220 W. 57th St.)	15 715.00
Surplus (including Reserve Fund of $7 210.00)	965 576.41
	$1 265 891.59

* The total cost of Lots and Building to date, $413 194.66.

† The total amount paid U. E. S. on account of the 39th Street Building, $262 500.

‡ Compounding Dues Fund, $12 330.00; Norman Medal Fund, $1 000.00; Rowland Prize Fund, $1 222.50; Collingwood Prize Fund, $1 000.00; Fellowship Fund, $13 038.28.

REPORT OF THE SECRETARY FOR THE

To the Board of Direction of the

Gentlemen:—I have the honor to present a statement of Receipts and Disbursements for the fiscal year of this Society, ending December 31st, 1918. I also append a general Balance Sheet showing the condition of the affairs of the Society.

Respectfully submitted,

Chas. Warren Hunt,
Secretary.

Receipts.

Balance on hand December 31, 1917, in Bank and in hands of Secretary		$8 344.63
Entrance Fees	$14 395.00	
Current Dues	88 489.08	
Past Dues	5 872.36	
Advance Dues	30 054.76	
Certificates of Membership	923.85	
Badges	3 202.00	
Sales of Publications	3 516.75	
Annual Meeting	2 716.28	
Binding	5 410.36	
Interest	831.32	
Miscellaneous	1 140.24	
Donation on account of Special Committees.	2 500.00	
Advance payment on account of rent	16 750.00	
Rent, 220 W. 57th St., Dec. 15-31, 1918	750.00	
Rent Rooms 1605-1607	1 119.90	
Mortgage	50 000.00	
Loan from C. W. Hunt	10 000.00	
		237 671.90
		$246 016.53

YEAR ENDING DECEMBER 31st, 1918.

American Society of Civil Engineers.

Disbursements.

Salaries of Officers	$15 100.00*	
Clerical Help	24 647.85	
Mileage of Directors	3 934.69	
Mileage of Nominating Committee	1 266.90	
Mileage of Committees	2 695.40	
Work of Committees	2 947.52	
Publications	38 867.44	
Postage	8 691.53	
General Printing	3 535.88	
Office Supplies	2 003.90	
Reading Room Maintenance	371.10	
Badges	2 311.02	
Certificates of Membership	591.00	
Binding	4 891.43	
Prizes	261.33	
Annual Meeting	2 726.91	
Furniture	1 591.10	
Interest on Mortgage	7 457.50	
Current Business	2 401.78	
Petty Expenses	64.94	
U. E. S. General Assessment	10 154.64	
U. E. S. Library Assessment	4 000.00	
U. E. S. Engineering Council Assessment	4 000.00	
U. E. S. Use of Meeting Rooms, Telephone, etc.	1 494.49	
Real Estate (Alterations to 57th St. Building)	54 835.66	
Refunding Dues (Members in Service)	2 793.63	
Moving Expenses	337.50	
Payment of loan (C. W. Hunt)	10 000.00	
Miscellaneous	194.64	
		$214 169.78
Balance on hand, December 31st, 1918:		
In Garfield National Bank	$30 346.75	
In Hands of Secretary	1 500.00	
		31 846.75
		$246 016.53

* Secretary, $12 000; Treasurer, $100; Assistant Secretary, $3 000.

REPORT OF THE TREASURER OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS FOR THE YEAR ENDING DECEMBER 31ST, 1918.

In compliance with the provisions of the Constitution, I have the honor to present the following report for the year ending December 31st, 1918:

Balance on hand, December 31st, 1917		$8 344.63
Receipts from current sources, January 1st, to December 31st, 1918	$158 421.90	
Donation on account of Special Committee (Stresses in Railroad Track)	2 500.00	
November 9th, 1918, sixth installment on Mortgage Loan	50 000.00	
Advance payment on account of rent	16 750.00	
Temporary loan from C. W. Hunt	10 000.00	237 671.90
Payment of audited vouchers for current business, January 1st to December 31st, 1918	$149 334.12	
Payment on account of Alterations to Building, 220 West 57th Street	54 835.66	
Refund to C. W. Hunt for temporary loan	10 000.00	
Balance on hand, December 31st, 1918:		
In Garfield National Bank	$30 346.75	
In hands of Secretary	1 500.00	31 846.75
	$246 016.53	$246 016.53

Respectfully submitted,

ALFRED D. FLINN,
Acting Treasurer.

NEW YORK, January 8th, 1919.

Due to the absence of Treasurer George W. Tillson, as one of the Society's delegates to the French Joint Engineering Congress, the undersigned was designated by the Executive Committee of the Board of Direction as acting Treasurer; as such he presents this report.

ALFRED D. FLINN.

ACCESSIONS TO THE ENGINEERING SOCIETIES LIBRARY

(From December 1st to December 31st, 1918)

DONATIONS*

The statements made in these notices are taken from the books themselves, and this Society is not responsible for them.

ELECTRICITY AND MAGNETISM FOR ENGINEERS:

Part I, Electric and Magnetic Circuits. By Harold Pender. N. Y., McGraw-Hill Book Co., Inc.; Lond., Hill Publishing Co., Ltd., 1918. 11+380 pp., 98 illus., 9 x 6 in., cloth. $3.00.

This volume covers substantially the same ground as that of the author's "Principles of Electrical Engineering". The method of treatment, however, is distinctly different. The various laws and relations are more fully discussed, and a greater number of practical applications are given. Particular emphasis is laid upon exact quantitative statements of the fundamental laws.

ELECTRIC MOTORS AND CONTROL SYSTEMS:

A Treatise on Electric Traction Motors and Their Control. By A. T. Dover. Lond., Sir Isaac Pitman and Sons, Ltd., 1918. 16 + 372 pp., 315 illus., 9 tab., 9 x 6 in., cloth. $6.00.

In this volume, which is an amplification of a portion of his work on "Electric Traction", the author treats of the application of electric motors to railways. The endeavor has been to meet the needs of engineers and advanced students of engineering, rather than those of specialists in electric railway equipment.

ELECTRICAL EQUIPMENT OF THE MOTOR CAR.

By David Penn Moreton and Darwin S. Hatch. N. Y., U. P. C. Book Co., Inc., 1918. 506 pp., 428 illus., 7 x 5 in., flexible cloth. $2.50.

This work is intended to give the lay reader sufficient knowledge of the electrical equipment of an automobile to enable him to operate it intelligently and to make ordinary adjustments and repairs. It is compiled from a series of articles that appeared in *Motor Age*, with additions and emendations.

MODERN SHIPBUILDING TERMS DEFINED AND ILLUSTRATED;

Including a Series of Photographs Showing the Progressive Steps of Construction, Together with an Appendix on Electric Welding. By F. Forrest Pease. Phila. and Lond., J. B. Lippincott Co. (copyright 1918). 143 pp., 68 pl., 8 x 5 in., cloth. $2.00.

This work contains a glossary of the more common words and phrases used in building a steel ship; a list of shipyard trades and the duties performed by each; a series of instruction charts on electric welding; a list of symbols used on plans and parts; a description of the Isherwood system of shipbuilding; directions for the use of acetylene, hydrogen, and oxygen for cutting and welding; and a select list of books on ship construction and equipment. The plates illustrate the construction of a ship by the usual methods, the construction of the "fabricated" ship, and the tools, machines, and installations.

SIMPLIFIED NAVIGATION FOR SHIPS AND AIRCRAFT:

A Text Book Based upon the Saint Hilaire Method. By Charles Lane Poor. N. Y., The Century Co., 1918. 17 + 126 pp., 10 illus., 7 charts, 4 tab., cloth. $1.50.

This work is an attempt to explain, in non-technical language and without the use of complicated mathematics, the principles which form the basis of modern methods of navigation. Particular attention is given to aerial navigation.

*Unless otherwise specified, books in this list have been donated by the publishers.

THE A-B-C OF AVIATION:

A Complete, Practical Treatise Outlining Clearly the Elements of Aeronautical Engineering with Special Reference to Simplified Explanations of the Theory of Flight, Aerodynamics and Basic Principles Underlying the Action of Balloons and Airplanes of All Types. By Victor Pagé. N. Y., The Norman W. Henley Publishing Co., 1918. 11 + 274 pp., 128 illus., 7 pl., 9 x 6 in., cloth. $2.50.

A companion volume to the author's "Aviation Engines", giving a simple account of the operation and repair of airplanes. Intended for use by prospective aviators and mechanics, not as a treatise for engineers and designers. Includes instructions for lining up and inspecting typical airplanes before flight and also gives easily understood rules for flying.

AEROBATICS.

By H. Barber. N. Y., Robert M. McBride and Co., 1918. 61 pp., 29 pl., 11 x 18 in., cloth. $3.00.

This book is an explanation of the general rules governing flying. The instruction is arranged in progressive form and is intended to convert the novice into an expert pilot in the shortest possible time, with the greatest possible degree of safety to himself and his machine.

PRACTICAL AVIATION:

An Understandable Presentation of Interesting and Essential Facts in Aeronautical Science. By Charles B. Hayward. 2d edition. Chic., American Technical Society, 1919. 784 pp., illus., 8 x 6 in., flexible cloth. $3.75.

This volume treats of the theory, design, and construction of airplanes and dirigible balloons and their motors; and describes the types in use. Considerable space is given to the military uses of airplanes and to the methods of flying used by military aviators.

PRACTICAL AVIATION FOR MILITARY AIRMEN.

By Maj. J. Andrew White. N. Y., Wireless Press (copyright 1918). 197 pp., illus., pl., 9 x 6 in., cloth. $1.75.

The author's aim has been to produce a textbook suited for intensive study by students of military aviation who wish to learn the essentials of flying in the shortest possible time. The reading matter has been condensed by eliminating everything but essentials and providing a large number of drawings, conveniently arranged.

SUCCESS IN THE SMALL SHOP.

By John H. Van Deventer. 2d edition. N. Y., published by American Machinest (McGraw-Hill Book Co., Inc., Sole Selling Agents), 1918. 137 pp., illus., 11 x 9 in., ¼ cloth. $1.75.

A series of articles, fifty in number, dealing with the problems of small machine shops, that appeared originally in the *American Machinist*. The articles discuss economic conditions, management, equipment, methods, etc., and are intended to be of practical help to owners and workmen.

OXWELDING AND CUTTING:

Manual of Instruction. Compiled by the Oxweld Acetylene Company, Jersey City, N. J. (copyright 1918). 124 pp., illus., 8 x 5 in., paper.

The manual describes the apparatus and the methods of using it, and gives a series of practice problems illustrating correct methods of meeting those that occur in shops where oxy-acetylene is used for cutting and welding.

MILL AND CYANIDE HANDBOOK;

Comprising Tables, Formulæ, Flow-Sheets, and Report Forms, Compiled and Arranged for the Use of Metallurgists, Mill-Men and Cyanide Operators. By W. A. Allen. Lond., Charles Griffin and Co., Ltd.; Phila., J. B. Lippincott Co., 1918. 10 + 128 pp., 7 x 4 in., cloth. $2.00. (Gift from J. B. Lippincott Co.)

The author has tabulated the physical, chemical, and mechanical data needed by mill-men, in a volume of convenient size, well-indexed. A glossary of mill and cyanide terms is included.

SCRAP METALS;

Study of Iron and Steel Old Material, Its Preparation and Markets. By George H. Manlove. The Old Metals. By Charles Vickers. Cleveland. The Penton Publishing Co., 1918. 278 pp., 8 x 6 in., cloth. $2.00.

The two monographs which compose this volume treat of the utilization of old metal. The first is restricted to scrap iron and steel, and the second discusses non-ferrous metals. The book is a pioneer attempt to present the scrap industry in print.

AMERICAN ENGINEERING BEHIND THE BATTLE LINES IN FRANCE.

By Robert K. Tomlin, Jr. N. Y., Engineering News-Record (McGraw-Hill Book Co., Inc., Selling Agents) 1918. 91 pp., illus., 12 x 9 in., ¼ cloth. $2.00. (Gift from McGraw-Hill Book Co.)

These nineteen articles, reprinted from the McGraw-Hill periodicals of the year, describe various phases of the engineering work executed by the American Army. Gathered together, they form an interesting account of the problems and the methods used to solve them.

AMERICAN PROBLEMS OF RECONSTRUCTION;

A National Symposium on the Economic and Financial Aspects. Edited by Elisha M. Friedman, with a Foreword by Franklin K. Lane. N. Y., E. P. Dutton and Co., 1918. 23 + 471 pp., 8 x 5 in., cloth. $5.00.

The editor here presents the opinions of some twenty-eight prominent Americans, in the hope of stimulating thought on the subject. The specific points treated are the temporary effects of the war, the best methods of facilitating our readjustment to peace conditions, the permanent effects of the war, the changes that these will effect in our national life, and the national economic policy that should be adopted. Contents: Part I, A Perspective of the Question; Part II, Efficiency in Production; Part III, Adjustments in Trade and Finance; Part IV, Programs, Monetary and Fiscal.

THE ATOMIC WEIGHTS OF BORON AND FLUORINE.

By Edgar F. Smith and Walter K. Van Haagen. Wash., Carnegie Institution, 1918, 65 pp., 4 illus., 4 tab., 10 x 7 in., paper. $1.00.

The authors describe in detail their work on the atomic weight of boron, and give a recalculation of that of fluorine, based on their new value for boron. This latter value is considerably lower than that hitherto accepted.

GRAPHIC CHARTS FOR THE BUSINESS MAN.

By Stephen Gilman. Chic., La Salle Extension University, 1918. 62 pp., 56 illus., 9 x 6 in., paper.

A pamphlet showing the value of charts in presenting statistical data, and describing some of the varieties used in business.

A STUDY OF ENGINEERING EDUCATION;

Prepared for the Joint Committee on Engineering Education of the National Engineering Societies. By Charles Riborg Mann. (Carnegie Foundation for the Advancement of Teaching, Bulletin No. 11.) N. Y., 1918. 11 + 139 pp., 10 x 8 in., paper.

The purpose of this report is to examine the fundamental question of the right methods of teaching and of the preparation of young men for the engineering professions. In the light of the fifty years of experience of the engineering colleges of the United States, an effort has been made to suggest the pedagogic basis of the course of study intended to prepare young men for the work demanded of the engineer to-day, without losing sight of the point of view of the teacher, the engineer, the manufacturer, and the employer. A limited number of typical schools were visited and studied by Professor Mann, and the views of the engineering profession throughout the country were ascertained in the course of the investigation. It is the hope of the Committee that the report will awaken wide interest because of its applicability, and that its influence on engineering education will be beneficial.

ANNUAL CHEMICAL DIRECTORY OF THE UNITED STATES,

2d Edition, 1918. Consulting Editor, B. F. Lovelace; Managing Editor, Charles C. Thomas. Baltimore, Williams and Wilkins Co. (copyright 1918). 534 pp., 9 x 6 in., cloth. $5.00.

This directory is intended as a comprehensive review of all matters relating to industrial, technical, and scientific chemical development in the United States. It contains lists, classified by subject and location, of manufacturers and dealers in chemicals and allied products and in equipment; a geographical directory of industrial, institutional, Federal, State, municipal, and commercial laboratories; a list of technical and scientific societies of the world, and bibliographies of technical and scientific journals, and of the important new books of 1917-18. A "News and Notes" section completes the work. This second issue is approximately twice as large as the first.

HENDRICK'S COMMERCIAL REGISTER OF THE UNITED STATES FOR BUYERS

And Sellers; With Which has been Incorporated "The Assistant Buyer". Especially Devoted to the Interests of the Electrical, Engineering, Hardware, Iron, Mechanical, Mill, Mining, Quarrying, Chemical, Railroad, Steel, Architectural, Contracting, and Kindred Industries. A Complete and Reliable Annual Register of Producers, Manufacturers, Dealers, and Consumers Connected with the Aforesaid Industries. N. Y., S. E. Hendricks Co., Inc. (copyright 1918). 2381 pp., 10 x 8 in., cloth. $10.00.

This register of producers, manufacturers, dealers, and consumers connected with the engineering and industrial activities of the country has been carefully revised and corrected. The firms included are listed alphabetically and also carefully classified. A section containing trade names and brands, with the names of manufacturers, forming a convenient ready reference list for purchasers, is a distinctive feature.

LOCOMOTIVE HAND-BOOK.

Compiled by American Locomotive Company. N. Y., 1917. 195 pp., 9 illus., 89 tab., 6 x 4 in., leather. 75 cents.

The compilers have arranged the tables, formulas, and other information used by locomotive designers, in a convenient book of pocket size.

TOPOGRAPHIC STADIA SURVEYING;

A Manual, with Reduction Tables and a New Type of Reduction Diagram. By C. E. Grunsky. N. Y., D. Van Nostrand Co., 1917. 99 pp., 18 illus., 8 tab., folding diag. in cover pocket, 7 x 4 in., cloth. $2.00 (Gift from Author).

The author describes a method of surveying and a special type of diagram for the reduction of stadia notes, which has been found to be very satisfactory in practice.

SUMMARY OF SOCIETY MEMBERSHIP SERVING IN THE ARMIES AND NAVIES OF THE UNITED STATES AND ITS ALLIES

January 8th, 1919

American Army

Major-Generals	9
Brig.-Generals	16
Colonels	51
Lt.-Colonels	59
Majors	247
Captains	552
First Lieutenants	270
Second Lieutenants	76
Regimental Sergeants	1
Master Engineers	7
Master Gunners	2
Sergeants	17
Corporals	9
Privates	41
Students, Training Camps	7
Miscellaneous	4
Total	1368

British Army

Brig.-Generals	1
Lt.-Colonels	5
Majors	10
Captains	16
Lieutenants	17
Second Lieutenants	6
Corporals	2
Privates	1
Miscellaneous	1
Total	59

French Army

Commandant (rank not given)	1
Captains	2
Sous-Lieutenant	1
Aspirant	1
Miscellaneous	2
Total	7

Italian Army

Colonel	1
Total in Armies	1435

Summary for Armies

Major-Generals	9
Brig.-Generals	17
Colonels	52
Lt.-Colonels	64
Majors	257
Commandant (rank not given)	1
Captains	570
Lieutenants	287
Second Lieutenants	83
Regimental Sergeants	1
Master Engineers	7
Master Gunners	2
Sergeants	17
Corporals	11
Privates	42
Students, Training Camps	8
Miscellaneous	7
Total	1435

American Navy

Rear-Admirals	5
Captains	6
Commanders	14
Lt.-Commanders	12
Civil Engineers (rank not given)	10
Lieutenants	29
Lieutenants (Junior Grade)	10
Ensigns	10
Asst. Paymaster (rank not given)	1
Chf. Machinist's Mate	3
Chf. Carpenter's Mate	1
Total	101

British Navy

Lieutenant	1
Total in Navies	102

Summary for Navies

Rear-Admirals	5
Captains	6
Commanders	14
Lt.-Commanders	12
Civil Engineers (rank not given)	10
Lieutenants	30
Lieutenants (Junior Grade)	10
Ensigns	10
Asst. Paymaster (rank not given)	1
Chf. Carpenter's Mate	1
Chf. Machinist's Mate	3
Total	102

RECAPITULATION

Total in Army	1435	
Total in Navy	102	
Total on Roll of Honor		1537
Died in Service		19
Grand Total		1556

ROLL OF HONOR

A List of Members of the Society Who are Serving in the Army or Navy of the United States or Any of Its Allies.*

VANSITTART, GEORGE EDWARD. *Maj., 13th Battery, Canadian Field Artillery, 2d Canadian Div.; wounded in action (France); died May 14th, 1916.*

AGNEW, AUGUSTUS WATEROUS. *Capt., 3d Canadian Pioneers; wounded in action (France); died September 17th, 1916.*

HAGUE, WILLIAM. *1st Lieut., Engr. R. C., 116th Engrs.; died in service (France), January 1st, 1918.*

GOODFELLOW, JAMES GORDON. *Maj., Royal Engrs.; killed in action (France), March 23d, 1918.*

BUCKWALTER, HARRIS DANIEL. *Capt., Engr. R. C.; killed in action (France), May 12th, 1918.*

LINDBERY, CHARLES ARTHUR. *Capt., Engr. R. C.; died in service (Camp Lee, Va.), May 27th, 1918.*

ANNEAR, EDGAR HAROLD. *Capt., Engr. R. C.; died in service (Hoboken, N. J.), August 28th, 1918.*

SLEPPY, KIRBY BALDWIN. *Capt., Engineers, U. S. A., 4th Engrs.; killed in action (France), August 4th, 1918.*

ALEXANDER, EDWARD PORTER. *1st Lieut., Engineers, U. S. A., 509th Engrs.; died in service (France), September 5th, 1918.*

McCLURE, HUNTER. *1st Lieut., Engineers, U. S. A., Co. N, 21st Engrs.; died in service (France), September 26th, 1918.*

REAM, WARD HALL. *1st Lieut., Engineers, U. S. A., Co. C, 305th Engrs.; killed in action (France), October 4th, 1918.*

DEDICKE, ERNEST CHARLES. *1st Lieut., U. S. A.; wounded in action (France); died July 15th, 1918.*

DEAN, STANLEY. *Capt., Quartermaster Corps, U. S. A.; died in service (Camp Humphreys, Va.), October 2d, 1918.*

PECK, MYRON HALL. *Capt., Engineers, U. S. A., 2d Engrs.; killed in action (France), October 9th, 1918.*

HONEYMAN, BRUCE RITCHIE. *Capt., Engineers, U. S. A., Co. A, 313th Engrs.; died in service (France), October 15th, 1918.*

MILLS, ADELBERT PHILO. *Capt., Engineers, U. S. A.; died in service (France), October 20th, 1918.*

PRITCHETT, FREDERIC BORRADAILE. *Lieut., 109th F. A., Headquarters Co., 28th Div.; wounded in action (France); died September 6th, 1918.*

MURRAY, JAMES POWELL. *Capt., Engineers, U. S. A.; died in service (Austin, Tex.), September 28th, 1918.*

JONES, GRANDVILLE REYNARD. *Capt., Sanitary Corps, U. S. A.; died in service (Camp Benning, Ga.), December 22d, 1918.*

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* This list is made up from replies to a circular forwarded to members of the Society, and others, and is probably neither accurate nor complete. It is requested that the attention of the Secretary be called to any omissions or inaccuracies in order that they may be corrected in subsequent lists.

Abbot, Frederic V. Brig.-Gen., Engineers, U. S. A.

Abbot, Frederick William. Lt.-Col., British Army.

Acher, A. H. Maj., Engineers, U. S. A.; Acting Lt.-Col., 4th Engrs., A. E. F., France.

Acker, Robert L. Corporal, Headquarters Co., 7th F. A., A. E. F., France.

Ackerman, Alexander S. Capt., Engineers, U. S. A., A. E. F., France.

Ackerman, Arthur P. 1st Lieut., Engineers, U. S. A., 517th Engrs.

Adams, Arthur. Lt.-Col., Ordnance, U. S. A.

Adams, Edward M. Maj., U. S. A.

Adams, Milton Jewell. Capt., Engineers, U. S. A., Co. C, 114th Engrs.

Adams, Raymond E. Capt., Quartermaster Corps, U. S. A.

Adams, Walter Francis. Sergeant, Co. E, 2d Bn., 23d Engrs., A. E. F., France.

Adams, William H. Capt., Quartermaster Corps, U. S. A.

Albert, Frederick W. Lt.-Col., Engineers, U. S. A., 33d Engrs., A. E. F., France.

Alden, Herbert C. 1st Lieut., Coast Artillery, U. S. A.

Alden, Langford Taylor. Aspirant, 7e Batterie, 51st Regt. d'Artillerie, Secteur Postal No. 82 (French Army); Care, Morgan, Harjes Cie., Boulevard Haussmann, Paris, France.

Alderman, Ernest S. Lieut., Quartermaster Corps, U. S. A.

Alexander, Kay. Maj., 2d in Command, 12th Canadian Ry. Troops, B. E. F., France.

Allen, Franklin R. Capt., Engineers, U. S. A., 603d Engrs., A. E. F., France.

Allen, Herschel Heathcote. Capt., Engineers, U. S. A.

Allen, Ralph B. 1st Lieut., Engineers, U S. A., Co. B, 25th Engrs., A. E. F., France.

Allen, Raymond C. Capt., Quartermaster Corps, U. S. A.

Allen, Walter Henry. Maj., Engineers, U. S. A.

Allen, Walter Hinds. Commander, Civil Engineer Corps, U. S. N.

Allison, William F. Maj., Engineers, U. S. A., A. E. F., France.

Altman, Frank S. Lieut., Engineers, U. S. A., 23d Engrs.

Altstaetter, F. W. Col., Engineers, U. S. A.

Anders, Frank L. Capt., Quartermaster Corps, U. S. A.

Anderson, C. L. B. Lieut., Civil Engineer Corps, U. S. N.

Anderson, J. E. Maj., 212th Field Co., Royal Engrs., B. E. F., France.

Anderson, W. P. Capt., Engineers, U. S. A., A. E. F., France.

Anderson, W. S. Cadet, School of Military Aeronautics, U. S. A.

Andrew, Clarence R. Capt., Engineers, U. S. A., 32d Engrs.

Andrews, J. H. M. Lt.-Col., Ordnance, U. S. A.

Angas, Robert M. 1st Lieut., U. S. A., 106th Engrs.

Applegarth, Gault. Capt., Engineers, U. S. A., 23d Engrs.

Arakawa, Futoshi. 2d Lieut., Co. K, 1st Hawaiian Inf., U. S. A., Schofield Barracks, Hawaii.

Ardery, Edward Dahl. Col., Engineers, U. S. A.

Armitage, George W. Maj., Quartermaster Corps, U. S. A.

Armstrong, Charles Johnstone. Brig.-Gen.; Chf. Engr., H. Q., Canadian Army Corps, B. E. F., France.

Armstrong, Merwin. Capt., Engineers, U. S. A., Co. D, 105th Engrs., A. E. F., France.

Armstrong, Roger W. Capt., Quartermaster Corps, U. S. A.

Arn, William G. Maj., Engineers, U. S. A., 13th Engrs. (Ry.), Postal Sector 215, A. E. F., France.

Arnold, Bion J. Lt.-Col., Air Service, U. S. A.

Ashkins, Nathan Thomas. 1st Lieut., Engineers, U. S. A., Lines of Communication, Eng. Headquarters, A. E. F., France.

Ashley, Carl. Capt., Engineers, U. S. A., U. S. M. P. O. 702, A. E. F., France.

Ashmead, P. H. Maj., Engineers, U. S. A.

Ashton, Raymond. 2d Lieut., Air Service, U. S. A., A. E. F., France.

Asplundh, E. T. Capt., Engineers, U. S. A.; Supply Officer, 103d Engrs.

Asserson, Henry Raymond. Maj., Engineers, U. S. A., C. E. L. O. C., A. E. F., France.

Atterbury, W. W. Brig.-Gen.; Director-General of Transportation, A. E. F., France.

Atwood, William G. Lt.-Col., Engineers, U. S. A., 17th Engrs. (Ry.), U. S. A. P. O. 701, A. E. F., St. Nazaire, France.

Austin, H. A. R. 1st Lieut., Engineers, U. S. A.

Ayres, John Henry. Capt., Engineers, U. S. A., Co. D, 42d Engrs.

Ayres, Quincy C. 2d Lieut., Engineers, U. S. A. (*Unattached*), A. E. F., France.

Babbitt, Harold E. Capt., Engineers, U. S. A., U. S. P. O. No. 757, A. E. F., France.

Baffrey, Charles R. Capt., 102d Reg. d'Artillerie (French Army), Secteur Postal 160, B. C. M., Paris, France.

Bailey, Lewis P. Capt., Engineers, U. S. A., Co. A, 304th Engrs.

Bakenhus, R. E. Commander, Civil Engineer Corps, U. S. N.

Baker, George L. Capt., U. S. A., Co. C, 13th Bn., U. S. Guards.

Baker, H. S. Col., Engineers, U. S. A., 111th Engrs., A. P. O. 796, A. E. F., France.

Baker, Shirley. Capt., Engineers, U. S. A., Co. B, 23d Engrs.

Balch, William H. Maj., Engineers, U. S. A., A. P. O. 717, A. E. F., France.

Barber, Charles W. Private, 38th Engrs.

Barber, Justin F. Sergeant, Co. M, 23d Engrs., A. E. F., France.

Barber, Norman N. Capt., Engineers, U. S. A., 16th Engrs., A. E. F., France.

Barclay, A. J. 1st Lieut., Engineers, U. S. A.

Barnard, Archer F. 1st Lieut., Engineers, U. S. A.

Barney, Samuel E. Maj., Engineers, U. S. A. (*Unassigned*).

Barry, E. J. Maj., Engineers, U. S. A.

Bartholomew, B. W. Lieut., Engineers, U. S. A., 301st Engrs.

Bascom, George R. Maj., Sanitary Corps, U. S. A.

Bass, Fred T. Capt., Engineers, U. S. A., Headquarters, 1st Bn., 32d Engrs., A. E. F., France.

Bassett, Herbert H. Maj., Engineers, U. S. A.

Battie, H. S. 1st Lieut., Engineers, U. S. A.

Baver, Walter S. Lieut., Sanitary Corps, U. S. A.

Baxter, O. G. Capt., Engineers, U. S. A., Co. C, 601st Engrs.

Bayliss, Paul. 2d Lieut., Engineers, U. S. A., 8th Engrs. (Mounted).

Beach, Lansing H. Col., Engineers, U. S. A.

Beale, Allan S. Lieut., U. S. Air Service (Aeronautics).

Beall, Pendleton. Private, Headquarters Co., 165th Inf., A. E. F., France.

Beam, Carl Eugene. 2d Lieut., Engineers, U. S. A., 541st Engrs., A. E. F., France.

Bean, Paul Jones. Civ. Engr., U. S. N.

Beebe, James W. Capt., Engineers, U. S. A.

Beeman, Thomas R. Capt., Engineers, U. S. A., Care, D. G. T., A. E. F., France.

Begg, R. B. H. Capt., Engineers, U. S. A., A. E. F., France.

Behrman, I. E. Capt., Engineers, U. S. A., Care, C. E. O., A. E. F., France.

Bell, George Edward. Lieut., Canadian Engrs., Care, Bank of Montreal, Waterloo Pl., London, S. W. 1, England.

Bell, Harry W. Capt., Engineers, U. S. A., 5th Bn., 22d Engrs., A. E. F., France.

Bellinger, L. F. Commander, Civil Engineer Corps, U. S. N.

Benham, Claude Gilbert. Capt., Coast Artillery, U. S. A.

Benham, W. L. Maj., Quartermaster Corps, U. S. A.

Bennett, John W. F. Maj., Quartermaster Corps, U. S. A., Constr. Div.

Bennison, Ernest William. 1st Lieut., Engineers, U. S. A., 23d Engrs.

Bensel, J. A. Maj., Engineers, U. S. A.

Benson, Orville. Maj., Engineers, U. S. A., A. E. F., France.

Berdeau, Ray W. Capt., Engineers, U. S. A.; Engr. Officer, 220th Engrs.

Bickel, George R. Chf. Machinist's Mate, U. S. N. R. F.

Biddle, John. Maj.-Gen., U. S. A.

Billings, Fred M. Capt., Engineers, U. S. A.

Binckley, George Sydney. Maj., Engineers, U. S. A., 112th Engrs., A. E. F., France.

Binger, Walter D. 2d Lieut., Signal Corps, U. S. A.

Birdseye, Claude H. Maj., Engineers, U. S. A., Office, Chf. of Artillery, A. P. O. 706, A. E. F., France.

Bishop, Roy P. 2d Lieut., Engineers, U. S. A., 35th Engrs., A. P. O. 735, A. E. F., France.

Bissell, C. T. Capt., Quartermaster Corps, U. S. A.

Bither, T. A. 2d Lieut., Signal Corps, Aviation Section, U. S. A.

Bixby, William H. Brig.-Gen., U. S. A. (*Retired*).

Black, Dudley F. Capt., Engineers, U. S. A., Co. C, 513th Engrs., A. E. F., France.

Black, E. B. Maj., A. S. (P.), U. S. A.

Black, G. G. Capt., Engineers, U. S. A.; Acting Adjt., 314th Engrs.

Black, James B. Capt., Engineers, U. S. A., Office, D. M. E. and E. S., A. P. O. 717, A. E. F., France.

Black, Ralph P. 1st Lieut., Engineers, U. S. A., 32d Engrs.

Black, Roger Derby. Lt.-Col., Engineers, U. S. A., Headquarters, A. E. F., France.

Black, Walter G. 1st Lieut., Co. 7, E. O. T. S., Camp A. A. Humphreys, Va.

Black, William M. Maj.-Gen., U. S. A.; Chf. of Engrs., U. S. A.

Blackman, J. W. B. Lieut., Canadian Ry. Troops, C. E. F., France.

Blair, Alexander. 2d Lieut., Royal Engrs., B. E. F., France.

Blair, McCrea Parker. Capt., No. 1 Depot Bn., Manitoba Regt., Winnipeg, Man., Canada.

Blanchard, Murray. Maj., Engineers, U. S. A., 520th Engrs.

Blauvelt, Louis D. Maj., Quartermaster Corps, U. S. A.

Blucher, Conrad M. von. 1st Lieut., Engineers, U. S. A.

Boesch, Clarence E. Capt., U. S. A., Co. B, 105th Engrs.

Boggs, F. C. Col., U. S. A., 315th Engrs.

Boland, Charles J. 1st Lieut., Signal Corps, U. S. A., 492d Constr. Div., A. E. F., France.

Bolger, Edwin Gibson. Barron Field, Everman, Tex.

Bolin, Harry W. Sergeant, Co. E, 23d Engrs.

Bolton, Frank L. Capt., Engineers, U. S. A.

Bond, P. S. Col., U. S. A., 107th Engrs.; Div. Engr., 32d Div., Army Engr. School, U. S. P. O. 714, A. E. F., France.

Boorman, Kitchell M. Lieut., U. S. A., Office, Chf. Engr., 2d Army, A. P. O. 784, A. E. F., France.

Booth, Raymond. 1st Lieut., Engineers, U. S. A., 54th Engrs.

Borchers, Perry E. Capt., Engineers, U. S. A.

Borden, Guy. Lieut., Engineers, U. S. A.

Boschke, Guy. Maj., Engineers, U. S. A., M. P. O. 705, A. E. F., France.

Bott, C. N. 1st Lieut., Engineers, U. S. A., 312th Engrs.

Boult, Charles N. 2d Lieut., 28th Reinforcements, New Zealand Engrs., N. Z. E. F., Care, P. O., Wellington, New Zealand.

Bowen, Charles K. Capt., Engineers, U. S. A.

Bowen, Edward Withers. Capt., Infantry, U. S. A., 2d Inf. Replacement Regt.

Bowie, William. Maj., Engineers, U. S. A.

Bowlby, Henry L. Lt.-Col., Engineers, U. S. A.

Bowne, Sidney B. 2d Lieut., U. S. Public Health Service.

Boyd, George R. Capt., Engineers, U. S. A., A. E. F., France.

Boyden, Harry C. Maj., Engineers, U. S. A.

Brace, James H. Maj., U. S. A., 22d Engrs., A. E. F., France.

Bragg, Kendal B. Lieut., Civil Engineer Corps, U. S. N.

Braly, Raymond F. 1st Lieut., Engineers, U. S. A.

Braunworth, Percy L. Capt., Engineers, U. S. A., Care, Director-General of Transportation, Army P. O. 705, A. E. F., France.

Breck, Charles R., Jr. Capt., Engineers, U. S. A., 31st Engrs., A P. O. 718, A. E. F., France.

Bres, Edward Sedley. 1st Lieut., Engineers, U. S. A., 114th Engrs.

Breuchaud, Jules R. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Brewster, Henry B. Capt., Engineers, U. S. A., and Adjt., 66th Engrs., A. E. F., France.

Breymann, John B., Jr. 2d Lieut., Coast Artillery, U. S. A., 22d Co.

Briggs, Robert W. 2d Lieut., Signal Corps, Aviation Section, U. S. A., 73d Aero Constr. Squadron.

Bright, Graham B. Capt., Engineers, U. S. A., and Regimental Adjt., 305th Engrs. (Pioneers).

Brinkley, Milo H. Capt., Engineers, U. S. A.

Bronson, Howard F. Capt., Sanitary Corps, U. S. A.

Brook, A. E. Capt., Royal Engrs., B. E. F., France.

Brooking, J. H. Capt., Engineers, U. S. A., Co. B, 12th Engrs. (Ry.), A. E. F., France.

Brooks, Josiah R. 1st Lieut., Engineers, U. S. A.

Brower, I. C. Maj., Quartermaster Corps, U. S. A., Constr. Div.

Brown, Charles E. Capt., Engineers, U. S. A.

Brown, Clarence C. Capt., Engineers, U. S. A.; Bn. Adjt., 12th Engrs. (Ry.), A. E. F., France.

Brown, Earl I. Col., U. S. A., 317th Engrs.

Brown, Elbert C. Capt., Engineers, U. S. A., 142d Engrs.

Brown, Elliot C. Lt.-Commander, U. S. N. R. F.

Brown, H. Whittemore. 2d Lieut., Engineers, U. S. A., A. E. F., France.

Brown, Harry Madara. 1st Lieut., Air Service, U. S. A.

Brown, Levant R. Capt., Engineers, U. S. A.

Brown, Marshall W. Maj., Engineers, U. S. A., P. O. 702, A. E. F., France.

Brown, Norman F. Maj., Railroad Transportation Corps, U. S. A., Care, Director-Gen. of Transportation, A. E. F., France.

Brownell, E. H. Commander, Civil Engineer Corps, U. S. N.

Bruner, Louis S. 1st Lieut., U. S. A., Co. I, 23d Engrs., A. E. F., France.

Brush, Carl F. Capt., Engineers, U. S. A., A. P. O. 716, A. E. F., France.

Bruton, Philip G. 2d Lieut., Signal Corps, Constr. Div., U. S. A.

Bryan, Clark A. Capt., Engineers, U. S. A.

Bryan, George, Jr. 1st Lieut., Engineers, U. S. A.

Buchanan, Warren Henderson. Chf. Machinist Mate, U. S. N. R. F.

Bucher, Harold F. Lieut., Engineers, U. S. A., 2d Engrs., A. E. F., France.

Buck, Richard S. Maj., Engineers, U. S. A., 11th Engrs. (Ry.).

Buck, Walter Van. Capt., Engineers, U. S. A., 23d Engrs.

Bull, George M. Civ. Engr., U. S. N. R. F.

Bunker, George H. Capt., Engineers, U. S. A., 306th Engrs.

Bunker, Stephen S. Capt., Engineers, U. S. A., Co. C, 503d Service Bn., A. E. F., France.

Burd, Edward M. Capt., Coast Artillery, U. S. A.

Burdett, O. L. Capt., Engineers, U. S. A., Co. A, 25th Engrs., A. E. F., France.

Burgess, Harry. Col., U. S. A., 16th Engrs. (Ry.), A. E. F., France.

Burkett, Joseph M. Capt., Engineers, U. S. A., A. E. F., France.

Burky, C. R. Capt., Signal Corps, Aviation Section, U. S. A.

Burr, Edward. Col., Engineers, U. S. A., Manila, Philippine Islands.

Burrell, Glenn S. Lt.-Commander, Civil Engineer Corps, U. S. N.

Burrowes, H. G. Capt., Engineers, U. S. A., Co B, 25th Engrs., A. E. F., France.

Burt, Henry J. Maj., Quartermaster Corps, U. S. A.

Burton, William. Capt., Engineers, U. S. A., 521st Engrs., A. E. F., France.

Bush, Lee M. 2d Lieut., Field Artillery, U. S. A.

Bush, Lincoln. Col., Quartermaster Corps, U. S. A.

Bushnell, Howard B. Capt., Engineers, U. S. A., A. E. F., France.

Bushnell, Howard E. Capt., Engineers, U. S. A.

Busse, Franz A. Capt., Engineers, U. S. A.; Director of Military Eng. and Engr. Supplies of France, Tours, France.

Butler, John Soule. Lt.-Col., Engineers, U. S. A.

Butler, Millard A. Col., Quartermaster Corps, U. S. A.

Butler, William P. Lieut., U. S. N. R. F.

Byam, L. H. Capt., Engineers, U. S. A.

Byllesby, Henry M. Maj., Signal Corps, Aviation Section, U. S. A.

Byrd, J. H. Capt., Engineers, U. S. A., 314th Engrs.

Byrne, Thomas Sneed. Capt., Ordnance, U. S. A.

Caffall, Geoffrey A. Private, No. 1 Coy., Canadian Machine Gun Depot, Seaford, Sussex, England.

Caldwell, William H. Lieut., U. S. N. R. F.

Cameron, Harry Frank. Lt.-Col., U. S. A., 209th Engrs.

Camp, George Dashiell. 1st Lieut., Engineers, U. S. A., 316th Engrs.

Campbell, Charles C. Corporal, Casual Co., Medical Detachment No. 2, U. S. A.

Canfield, George Hathaway. Capt., Engineers, U. S. A., 316th Engrs.

Carey, Matthew L. Capt., Quartermaster Corps, U. S. A., A. E. F., France.

Carey, William N. Maj., U. S. A., 1st Bn., 313th Engrs.

Carlin, J. P. Capt., Engineers, U. S. A.

Carlson, Carl Alexius. Commander, Civil Engineer Corps, U. S. N.

Caro, Phillip. Lieut., 2d Junior Co., No. 4 Command Depot, A. T. F., Codford, Wiltshire, England.

Carr, G. W., Jr. Co. F, 3d Provisional Regt., 156th Depot Brigade, U. S. A.

Carroll, James E. Maj., Engineers, U. S. A., 527th Engrs., A. P. O. 701, A. E. F., France.

Carter, E. Kemper. Capt., Engineers, U. S. A., Co. C, 518th Engrs.

Case, Charles A. Capt., Engineers, U. S. A., 314th Engrs., 87th Div., A. E. F., France.

Cate, Charles Edward. Capt., U. S. A., 45th Engrs., A. E. F., France.

Caton, John H., 3d. Capt., Engineers, U. S. A., Co. F, 33d Engrs.

Cattell, William A. Maj., Engineers, U. S. A.

Cerny, John W. Maj., Quartermaster Corps, U. S. A.

Chadwick, Maurice F. Private, 24th Tr. Bn., F. A. R. D., Camp Jackson, S. C.

Chamberlaine, Robert L. Capt., Air Service (A. P.), U. S. A.

Chambers, Frank T. Capt., Civil Engineer Corps, U. S. N.

Chandler, William E. Master Gunner, Headquarters Co., 55th Artillery, C. A. C., A. P. O. 723, A. E. F., France.

Chapman, Mellville D. Capt., U. S. Marine Corps, Machine Gun Bn., 5th Brigade, A. E. F., France.

Chapman, S. A. 1st Lieut., U. S. A., Headquarters, 2d Bn., 10th Engrs. (Forestry), A. E. F., France.

Chappell, Claude E. Capt., Engineers, U. S. A.

Charnley, Walter. 1st Lieut., Engineers, U. S. A.

Chase, Clifford E. Maj., Engineers, U. S. A., 4th Engrs.

Chase, Dean. 1st Lieut., Coast Artillery, U. S. A., Battery E, 62d Regt., C. A. C., A. E. F., France.

Cheney, Sherwood A. Col., U. S. A., 110th Engrs., A. E. F., France.

Cherry, Alan Gordon. 1st Lieut., U. S. A., 301st Engrs.

Chevalier, Willard T. Capt., Engineers, U. S. A., Co. D, 11th Engrs. (Ry.), A. E. F., France.

Child, John T. 1st Lieut., Sanitary Corps, U. S. A.

Childs, James A. Capt., Sanitary Corps, U. S. A.

Chipley, Dudley. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Chittenden, Albert Frederick. 1st Lieut., Engineers, U. S. A., Co. F, 18th Engrs. (Ry.), P. O. No. 705, A. E. F., France.

Christensen, George A. Maj., Quartermaster Corps, U. S. A.

Christophers, Reginald Gillon. (No. 60286), 2d Lieut., 34th Reinforcements, N. Z. E. F., Care, G. P. O., Wellington, New Zealand.

Church, Elihu C. Capt., Engineers, U. S. A., A. E. F., France.

Churchill, Percival M. Maj., Engineers, U. S. A., 538th Engrs., A. P. O. 752, A. E. F., France.

Churchill, Robert C. Lieut., U. S. A., Co. F, 12th Engrs. (Ry), A. E. F., France.

Claflin, William B. Capt., Engineers, U. S. A., Headquarters, 39th Div.

Claiborne, Herbert A., Jr. 2d Lieut., Signal Corps, U. S. A. (*Unassigned*).

Clark, Ernest A. Capt., Engineers, U. S. A.

Clark, Howard F. Capt., Engineers, U. S. A., A. E. F., France.

Clarke, Harry L. 1st Lieut., Engineers, U. S. A., Co. F, 28th Engrs., A. E. F., France.

***Clarke, Thomas C.** Col., U. S. A.; Div. Engr., 35th Div., A. E. F., France.

Clarke, W. D. Capt., Engineers, U. S. A., 23d Engrs. (Highway), A. E. F., France.

Clarkson, Charles D. S. Capt., U. S. A., 472d Engrs.

Class, C. Frank. Capt., Engineers, U. S. A.

Clayton, Thomas W. Capt., Engineers, U. S. A., A. E. F., France.

Cleckner, Frederick M. Private, Meteorological Section, Signal Corps, U. S. A.

Cleveland, Lou B. 1st Lieut., Engineers, U. S. A., Co. D, 105th Engrs.

Clinton, Delmar S. Maj., Engineers, U. S. A.

Cobb, William R. Lieut., U. S. N. N. V.

Cochrane, Victor Hugo. Maj., Quartermaster Corps, U. S. A.

Coe, C. S. Maj., Engineers, U. S. A., 17th Engrs. (Ry.), A. P. O. 701, A. E. F., France.

* Awarded the Croix de Guerre.

Coe, David. Capt., R. E., Care, R. C. E., Communications, A. P. O., S 1, B. E. F., France.

Coe, E. K. Maj., Engineers, U. S. A., Care, C. E. O., L. of C., U. S. M. P. O. No. 702, A. E. F, France.

Cole, Howard J. Capt., Engineers, U. S. A.

Coleman, Eugene H. Capt., Engineers, U. S. A., 312th Engrs.

Colgan, R. J. Capt., 11th Engrs. (Ry.), A. E. F., France.

Collins, Earl H. Capt., Coast Artillery, U. S. A.

Collins, Merton C. 1st Lieut., Engineers, U. S. A.

Columbia, Curtis F. 1st Lieut., Coast Artillery, U. S. A., Heavy Artillery Headquarters, A. E. F., France.

Comly, Harry S. Meteorologist, Signal Corps, 32d Service Co., Meteorological Section, U. S. A.

Comly, James R. 1st Lieut., Engineers, U. S. A., 55th Engrs.

Compton, Arthur M. Lt.-Col., U. S. A., 126th F. A.

Compton, R. Keith. Maj., Engineers, U. S. A.

Conard, Clarence Knight. Maj., Ordnance, U. S. A.

Conard, R. A. Civ. Engr., U. S. N. R. F., Port au Prince, Haiti.

Connelly, Walter L. Master Engr., Senior Grade, Headquarters Detachment, 310th Engrs.

Connolly, A. H. Cadet, School of Military Aeronautics, U. S. A.

Connolly, Donald H. Lt.-Col., Engineers, U. S. A., Gen. Staff.

Connor, W. D. Brig.-Gen., U. S. A., Gen. Staff; Asst. Chf. of Staff, A. E. F., France.

Converse, Joseph B. Lieut., U. S. A., Constr. Div.

Conway, N. B. Capt., Engineers, U. S. A., 516th Engrs.

Cook, Paul D. Maj., Engineers, U. S. A., 1st Bn., 138th Engrs.

Cooke, Frederick H. Lt.-Commander, Civil Engineer Corps, U. S. N.

Cooksey, R. M. Maj., Quartermaster Corps, U. S. A.

Coombs, Robert D. Maj., Ordnance, U. S. A.

Coomer, R. M. Capt., Engineers, U. S. A., Headquarters, Eng. Corps, Line of Communications, A. E. F., France.

Cooper, David R. Capt., Engineers, U. S. A., A. E. F., France.

Cooper, Hugh L. Lt.-Col., U. S. A., A. E. F., France.

Copeland, Robert Morris. Capt., Engineers, U. S. A.

Corkran, Wilbur Sherman. Maj., Engineers, U. S. A.

Cornell, J. W. Capt., Quartermaster Corps, U. S. A.

Cornish, Lorenzo D. Capt., Engineers, U. S. A., Co. C, 15th Engrs. (Ry.), A. E. F., France.

Corp, Henry W. 1st Lieut., Engineers, U. S. A.

Cosby, Spencer. Col., Engineers, U. S. A., 5th Engrs.

Cotter, Carl Henry. Lieut., Civil Engineer Corps, U. S. N.

Cottman, L. Warrington. Maj., Chemical Warfare Service, U. S. A.

Courtney, Maurice A. Lieut., R. T. C., U. S. A., A. P. O. 712, A. E. F., France.

Covert, John F. 1st Lieut., Engineers, U. S. A.

Cowles, William Pierce. Maj., Engineers, U. S. A., 34th Engrs., A. E. F., France.

Cox, Leonard M. Commander, Civil Engineer Corps, U. S. N.

Coy, Burgis G. Capt., Engineers, U. S. A., Co. D, 314th Engrs., A. E. F., France.

Cragin, Charles Calhoun. Maj., Engineers, U. S. A., 18th Engrs. (Ry.), P. O. Box 705, A. E. F., France.

Cranch, Eugene T. Lieut., Sanitary Corps, U. S. A.

Crandall, Carl. Flying Cadet, U. S. Air Service.

Crane, Albert Eli. 1st Lieut., Engineers, U. S. A., 6th Engrs., A. E. F., France.

Crane, Joseph S. Maj., Quartermaster Corps, U. S. A.

Crawford, Hugh W. Capt., U. S. A., Co. A, 110th Engrs., 35th Div., A. E. F., France.

Crawford, Ivan C. Maj., Engineers, U. S. A., Army Line School, A. E. F., France.

Crecelius, S. F. Lt.-Col., Engineers, U. S. A., 101st Engrs., A. E. F., France.

Crocker, Herbert Samuel. Lt.-Col., Quartermaster Corps, U. S. A.

Crocker, James R. Maj., Engineers, U. S. A., 106th Engrs.

Crosby, Lothrop. 1st Lieut., U. S. A.

Crosby, W. W. Lt.-Col., Engineers, U. S. A.

Crowell, Francis S. Capt., Quartermaster Corps, U. S. A.

Cudebec, Albert B. Capt., Engineers, U. S. A., U. S. Military P. O. No. 702, A. E. F., France.

Culver, Arthur. Lieut., R. E., 156th Field Co., R. E., B. E. F., France.

Cunliff, Charles, Jr. Lieut., U. S. A., 403d Engrs.

Cunningham, John G. L. Capt., Ordnance, U. S. A.

Curfman, Lawrence E. Lt.-Col., 314th Engrs., A. E. F., France.

Curley, J. F. Maj., Ordnance, U. S. A.

Currey, J. W. 1st Lieut., Engineers, U. S. A., Co. C, 115th Engrs.

Currie, Thomas A., Jr. Private, 116th Engr. Detachment, A. P. O. 727, St. Aignan-Noyers, A. E. F., France.

Cushing, Edward B. Maj., Engineers, U. S. A.; Supt., Army Transport Service, U. S. A. P. O. No. 705, A. E. F., France.

Cutler, Leon G. Capt., Coast Artillery, U. S. A., 57th Artillery, C. A. C., A. E. F., France.

Daae, H. A. Capt., Engineers, U. S. A.

Dallis, Park A. Capt., Engineers, U. S. A.; Adjt., 24th Engrs.

Daly, A. P. V. 2d Lieut., 4th Connaught Rangers; 48 Cathcart Rd., London, S. W., England.

Daly, D. A. Capt., Engineers, U. S. A., 16th Engrs., A. E. F., France.

Daly, John W. Lieut., Infantry, U. S. A.

Danforth, George Clapp. Capt., Engineers, U. S. A., 602d Engrs., A. E. F., France.

Darling, Clinton Stowell. Capt., U. S. A., 108th Engrs., A. P. O. 750, A. E. F., France.

Darville, M. A. 2d Lieut., Engineers, U. S. A., A. E. F., France.

Davidson, George B. 2d Lieut., Engineers, U. S. A., Headquarters, 26th Div., A. P. O. 709, A. E. F., France.

Davies, J. P. Capt., Ordnance, U. S. A.

Davis, Chandler. Capt., Engineers, U. S. A., 6th Engrs., A. E. F., France.

Davis, Daniel E. Capt., Quartermaster Corps, U. S. A.

Davis, Frederick A. W. Capt., U. S. A., 213th Engrs.

Davis, John C. Capt., Coast Artillery, U. S. A.

Davis, Robert M. 1st Lieut., Engineers, U. S. A., 57th Engrs. (Inland Waterways).

Davy, J. J. 1st Lieut., U. S. A., 23d Engrs.

Day, Warren E. Capt., Engineers, U. S. A.

Dean, Bertram D. Capt., Engineers, U. S. A., Dept., C. and F., Headquarters, S. O. S., U. S. M. P. O. 717, A. E. F., France.

Dean, Willis J. Capt., Quartermaster Corps, U. S. A.

de Charms, Richard, Jr. 1st Lieut., Engineers, U. S. A., Co. A, 503d Engrs. (Service Bn.), A. E. F., France.

Decker, Arthur J. Capt., Sanitary Corps, U. S. A.

Deets, Edward H. Capt., Quartermaster Corps, U. S. A.

DeGraff, Carlton R. 1st Lieut., Engineers, U. S. A.

De La Mater, S. T. Capt., Quartermaster Corps, U. S. A., Constr. Div., M. and R. Branch.

De Leuw, Charles E. 1st Lieut., Engineers, U. S. A., 4th Engrs.

De Moss, Samuel. Sergeant, Meteorological Section, Signal Corps, U. S. A.

Dent, Elliott J. Col., Engineers, U. S. A., 26th Engrs., A. P. O. 765, A. E. F., France.

Derby, George McC. Lt.-Col., Engineers, U. S. A.

Diesem, Harry C. Capt., Engineers, U. S. A., 404th Engr. Depot Detachment.

Diffenderfer, Claude O. Capt., Engineers, U. S. A., 534th Engrs., A. E. F., France.

Dillman, George L. Maj., Engineers, U. S. A.

Dobson, Gilbert C. Maj., Engineers, U. S. A.

Dodd, Joseph H. L. 2d Lieut., B. W. I. Regt.; Burlington, St. Margaret's Bay, Jamaica.

Doeleman, H. F. Maj., Quartermaster Corps, U. S. A.

Dohm, Edward Clarence. Capt., Engineers, U. S. A.

Donahey, Joseph A. Capt., Engineers, U. S. A.

Donaldson, Carl S. Co. G, Officers' Training School, Heavy Artillery, Fort Monroe, Va.

Donnelly, J. F. S. 1st Lieut., Engineers, U. S. A.

Doten, Leonard S. Maj., Quartermaster Corps, U. S. A.

Douglass, Louis R. Capt., Quartermaster Corps, U. S. A.

Dow, Hezekiah Shailer. 2d Lieut., 492d Constr. Squadron, Air Service, A. E. F., France.

Doyle, John S. Maj., Engineers, U. S. A.

Drayton, Newbold. Corporal, Battery D, 108th F. A., 53d Art. Brigade, 28th Div.

Drew, C. D. Capt., 11th Engrs. (Ry.), A. E. F., France.

Drummond, William W. Capt., Engineers, U. S. A., Co. B, 524th Engrs., A. P. O. 747, A. E. F., France.

Drury, William F. Capt., Engineers, U. S. A.

Du Bois, George B. 1st Lieut., Engineers, U. S. A., Commanding 6th Engr. Train, 3d Div., A. E. F., France.

Dunlap, Walter H. Capt., Engineers, U. S. A.

Dunn, Beverly C. Maj., Engineers, U. S. A.

Dunshee, Bertram K. 1st Lieut., Engineers, U. S. A., 316th Engrs.

Du Pré, Wallace Duncan. Lieut., M. T. Corps, U. S. A., Mech. Repair Shop Unit No. 303, U. S. A. P. O. 772, A. E. F., France.

Durham, Henry Welles. Maj., Engineers, U. S. A., 41st Engrs., A. E. F., France.

Durham, Leicester. Capt., Engineers, U. S. A., A. P. O. 733, A. E. F., France.

Dykeman, Conrad F. 1st Lieut., Engineers, U. S. A., 116th Engrs., P. O. 733, A. E. F., France.

Eason, F. G. Capt., Engineers, U. S. A., Co. A, 317th Engrs., A. P. O. 766, Mobile, A. E. F., France.

Easton, Russell B. Capt., Engineers, U. S. A.

Eaton, Herbert N. Sergeant, U. S. A.

Eckel, Edwin C. Capt., Engineers, U. S. A., Headquarters, A. E. F., France.

Eddy, Albert C. Capt., U. S. A., 55th Engrs., A. E. F., France.

Eddy, Harold M. Lieut., Civil Engineer Corps, U. S. N. R. F.

Edgerton, G. E. Col., Engineers, U. S. A.

Edmondson, Ralph S. 1st Lieut., U. S. A., 27th Engrs. (Min.).

Edwards, G. G. Capt., Engineers, U. S. A., Co. F, 315th Engrs.

Edwards, L. V. 1st Lieut., Engineers, U. S. A., Co. E, 138th Engrs.

Elliott, J. W. Capt., Engineers, U. S. A., Co. A, 602d Engrs.

Elliott, Malcolm. Lt.-Col., Engineers, U. S. A., 309th Engrs., A. O. P. 701, A. E. F., France.

Elliott, Percival. Private, Co. D, 33d Engrs.

Ellis, Gwynne W. Capt., Engineers, U. S. A., Co. E, 210th Engrs.

Ellison, Alexander H. 1st Lieut., Engineers, U. S. A., 3d Bn., 20th Engrs. (Forestry).

Eltinge, O. L. 1st Lieut., Engineers, U. S. A.

Ely, Carl B. Maj., Air Service, U. S. A.

Embury, Aymar, 2d. Capt., Engineers, U. S. A., Camouflage Section, A. E. F., France.

Emerson, George D. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Emerson, Raffe. Ensign, Flying Corps, U. S. N. R. F.

Emory, Lloyd T. Capt., Ordnance, U. S. A.

Endicott, Mordecai T. Rear-Admiral, Civil Engineer Corps, U. S. N.

Enger, Arthur L. Capt., Engineers, U. S. A.

Ernst, Oswald H. Maj.-Gen., U. S. A. (*Retired*).

Estes, F. E. Capt., 17th Engrs. (Ry.), A. E. F., France.

Everett, Chester McK. Capt., Sanitary Corps, U. S. A.

Everett, Ralph B. Private, Co. F, 23d Engrs., A. E. F., France.

Everham, Arthur C. Maj., Quartermaster Corps, U. S. A.

Fahy, Joseph Augustine. Capt., Engineers, U. S. A., Co. D, 518th Engrs., A. P. O. 752, A. E. F., France.

Fairchild, John F. Maj., Quartermaster Corps, U. S. A., Brigade Headquarters, 1st Corps Troops.

Fairlie, John Walter. 1st Canadian Exp. Force (*Retired*).

Fairman, James Robert. Capt., Engineers, U. S. A.

Falk, Myron S. Maj., Ordnance, U. S. A.

Farley, M. M. 1st Lieut., Engineers, U. S. A.

Farrin, James M. Capt., Engineers, U. S. A., Co. C, 302d Engrs., A. E. F., France.

Fassett, Earle W. 1st Lieut., Engineers, U. S. A., 316th Engr. Train.

Feigel, John H. 1st Lieut., Engineers, U. S. A., A. E. F., France.

Feiner, Mark A. Meteorological Section, Signal Corps, Aviation Section, U. S. A.

Feltham, Percy M. Capt., Engineers, U. S. A.

Ferguson, Harry Foster. 1st Lieut., Engineers, U. S. A., O. C. E. O., Adv. Sec., L. of C., A. P. O. 714, A. E. F., France.

Fernald, Gordon H. Capt., Engineers, U. S. A., Co. D, 304th Engrs., A. E. F., France.

Fickes, Clark R. Maj., Engineers, U. S. A., A. E. F., France.

Fiebeger, G. J. Col., U. S. A., Headquarters, A. E. F.

Fifer, Frank P. Capt., Engineers, U. S. A., Lines of Communications, A. E. F., France.

Finley, C. MacF. Capt., Engineers, U. S. A., 503d Service Bn., A. E. F., France.

Finnell, Woolsey. Maj., Engineers, U. S. A., 501st Engrs., U. S. A. P. O. 741, A. E. F., France

Fisher, George Joseph. 1st Lieut., Engineers, U. S. A., 219th Engr. Train.

Fisher, Janon. Maj., Engineers, U. S. A., 522d Engrs.

Fisk, Clinton H. Maj., Quartermaster Corps, U. S. A.

FitzGerald, C. C. Maj., Engineers, U. S. A., 32d Engrs.

Fitzgerald, Gerald C. Capt., Engineers, U. S. A., 319th Engrs., U. S. A. P. O. 716, A. E. F., France.

Fitzpatrick, F. J. Capt., Engineers, U. S. A., Co. C, Service Bn., 508th Engrs., A. E. F., France.

Fitzpatrick, Mark William. Sergeant, 10th Engr. Service Co. (Forestry), A. E. F., France.

Flagg, Herbert J. Capt., Coast Artillery, U. S. A.

Flagler, C. A. F. Brig.-Gen., U. S. A., 5th F. A. Brigade, A. E. F., France.

Fleming, Burton P. Capt., Engineers, U. S. A.

Flick, John K. Capt., Engineers, U. S. A.

Flook, Lyman R. 1st Lieut., Ordnance, U. S. A.

Fogerty, Merton S. Sergeant, Meteorological Section, Signal Corps, U. S. A., 3d Army, Coblenz, Germany.

Fogg, Alden K. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N.

Follin, James W. 1st Lieut., Sanitary Corps, U. S. A.

Fölling, B. N. Capt., Engineers, U. S. A., Co. A, 49th Engrs., A. E. F., France.

Foote, Olney N. Lieut., U. S. A., Co. G, 322d Inf.

Forbes, Francis B. 1st Lieut., Engineers, U. S. A.

Ford, William Ellis. Capt., Engineers, U. S. A.

Forster, Arthur Oscar. Capt., Quartermaster Corps, U. S. A.

Forter, Cecil A. 1st Lieut., Sanitary Corps, U. S. A.

Forter, Samuel A. Lieut., U. S. N. R. F.; Public Works Officer, U. S. Naval Air Station, Gironde, France.

Fortney, C. Page. Capt., Engineers, U. S. A.

Foster, C. M. Capt., Quartermaster Corps, U. S. A.

Foster, Ernest H. Ensign, U. S. N. R. F.

Foster, Samuel D. 1st Lieut., U. S. A., and A. D. C., Headquarters, 53d Artillery Brigade.

Fouilhoux, J. Andre. Capt., Field Artillery, U. S. A.

Fountain, Thomas L. Capt., Engineers, U. S. A., Care, C. O., 17th Engrs. (Ry.), U. S. A. P. O. 701, A. E. F., France.

Fowler, Charles Worthington. 1st Lieut., Signal Corps, Aviation Section, U. S. A., Commanding 485th Aero Constr. Squadron, A. E. F., France.

Fowler, Frank G. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Fowler, Frederick Hall. Capt., Engineers, U. S. A.

Fox, Henry. Capt., Engineers, U. S. A., 314th Engrs.

Fox, Stephenson W. Maj., Engineers, U. S. A.

Frank, George Stedman. Lieut., Signal Corps, Aviation Section, U. S. A., A. E. F., France.

Franklin, William H. 1st Lieut., Quartermaster Corps, Constr. Div., U. S. A.

Franks, John B. 1st Lieut., U. S. A., 7th F. A.

Freeman, William B. Capt., Engineers, U. S. A., Co. A, 509th Engrs. (Service Bn.)

French, F. C. Maj., Engineers, U. S. A., Headquarters, 79th Engrs.

Frickstad, Walter N. Capt., Engineers, U. S. A.

Friedman, Harry B. Lieut., Signal Corps, Aviation Section, U. S. A.

Fries, Amos A. Col., U. S. A., 30th Engrs.; Chf. of Gas Service, A. E. F., France.

Froiseth, Richard E. 1st Lieut., Engineers, U. S. A.

Frost, Edward M. Asst. Civ. Engr., U. S. N. R. F.

Fry, Alfred Brooks. Capt., U. S. N. N. V.

Furlow, Felder. Capt., Engineers, U. S. A.

Fyfe, James Lincoln. Maj., Quartermaster Corps, U. S. A.

Gabelman, Charles G. Lieut., Engineers, U. S. A.

Gailor, Chester F. Maj., Quartermaster Corps, U. S. A.

Galbreath, Albert W. 1st Lieut., Engineers, U. S. A., Co. B, 12th Engrs. (Ry.), A. E. F., France.

Gallagher, Leonard Bruce. Capt., Engineers, U. S. A., Co. D, 116th Engrs., A. E. F., France.

Galloway, John D. Maj., Engineers, U. S. A., A. P. O. 706, G. 2, A. E. F., France.

Galvin, James Augustine. 1st Lieut., Engineers, U. S. A.; Engr. Officer, Army General Staff Coll., U. S. A. P. O. No. 714, A. E. F., France.

Garlinghouse, R. L. Chf. Machinist's Mate, U. S. N. R. F. (*Unassigned*).

Garnett, Benjamin J. 1st Lieut., Engineers, U. S. A. (*Unassigned*), A. E. F., France.

Garrett, Robert P. Capt., Ordnance, U. S. A.

Gatens, Ray S. 1st Lieut., Engineers, U. S. A., Co. C, 42d Engrs., A. E. F., France.

Gaumer, A. W. 1st Lieut., Engineers, U. S. A.

Gausmann, Roy W. Maj., Engineers, U. S. A., 1st Bn., 303d Engrs., A. E. F., France.

Gayler, E. R. Commander, Civil Engineer Corps, U. S. N., Port au Prince, Haiti.

Geib, George Albert. Capt., Engineers, U. S. A., Co. A, 527th Engrs., Service Bn., A. P. O. 769, A. E. F., France.

Genung, J. H., Jr. Lieut., Engineers, U. S. A.

George, Howard H. Capt., Engineers, U. S. A., Co. E, 305th Engrs.

Getty, Lorenzo T. 1st Lieut., Signal Corps, Aviation Section, U. S. A., 75th Aero Constr. Squadron, A. E. F., France.

Gibbs, E. A. Maj., 15th U. S. Engrs. (Ry.), A. E. F., France.

Gibson, Thomas F. Corporal, Headquarters Co., 63d Inf.

Giesting, Frank A. Lt.-Col., Engineers, U. S. A., Headquarters, 302d Engrs., A. E. F., France.

Giffels, William C. 1st Lieut., Engineers, U. S. A.

Gilman, E. Dow. 1st Lieut., C. W. S., U. S. A.

Gladding, James N. Capt., Engineers, U. S. A. (*Unassigned*), A. E. F., France.

Glander, John Henry, Jr. Lieut. (Junior Grade), Civil Engineers Corps, U. S. N. R. F.

Glazier, W. L. Maj., Engineers, U. S. A.; Commanding Officer, 525th Engrs., Service Bn., A. E. F., France.

Goddard, Leslie Drew. Capt., Engineers, U. S. A.

Godfrey, Alex. H. Asst. Paymaster, U. S. N. R. F.

Godfrey, Stuart C. Lt.-Col., Engineers, U. S. A., Headquarters, 318th Engrs., A. E. F., France.

Goethals, George R. Col., U. S. A.; Engr. Officer, Headquarters, Army Artillery, 1st Army, A. E. F., France.

Goethals, George W. Maj.-Gen., U. S. A.

Golden, William A. Ensign, U. S. N. R. F., U. S. S. *Mary Alice.*

Goldsmith, Clarence. Maj., Quartermaster Corps, U. S. A.

Gooch, Carl Joseph. Co. E, 32d Engrs.

Goodman, Benjamin. 2d Lieut., Engineers, U. S. A., 504th Engrs., Headquarters, A. E. F., France.

Goodman, Leon. Capt., U. S. A., and Adjt., 109th Engrs.

Gordon, John Blake. Care, Chf. Engr. Officer, General Headquarters, A. E. F., France.

Gordon, Samuel. Lt-Commander, Civil Engineer Corps, U. S. N.

Goss, O. P. M. Capt., Air Service, Aircraft Production, Spruce Production Div., U. S. A.

Gotwals, John C. Lt.-Col., Engineers, U. S. A., Care, O. C. E., G. H. Q., A. P. O. 706, A E. F., France.

Gough, William J. Capt., Engineers, U. S. A.

Gould, William T. Capt., Engineers, U. S. A., U. S. M. P. O. 705, A. E. F., France.

Gow, C. R. Maj., Quartermaster Corps, U. S. A.

Grady, Frank L. Candidate, I. C. S., 3d Co., Valbonne (Ain.), A. E. F., France.

Graff, George W. Candidate, Field Artillery Central Officers' Training School, 29th Training Battery, Camp Zachary Taylor, Ky.

***Grant, John R.** Maj., M. C., R. E., Offizier-Gefangenenlager, Stralsund (Danholm), Germany.

Grant, Kenneth C. Maj., Quartermaster Corps, U. S. A.

Grant, U. S., 3d. Col., U. S. A.

Gravell, William Henry. Capt., Engineers, U. S. A., A. E. F., France.

Graves, E. M. Maj., Engineers, U. S. A., 529th Engrs.

Gray, Earle P. 1st Lieut., Engineers, U. S. A., 16th Engrs. (Ry.), A. E. F., France.

Gray, William B. Maj., Engineers, U. S. A.

Green, Charles N. Maj., Engineers, U. S. A.

Green, Charles Samuel. Capt., Engineers, U. S. A., 535th Engrs.

Green, Clarence Jasper. 1st Lieut., Oregon Coast Artillery.

Green, F. W. Lt.-Col., Transportation Corps, U. S. A.; Gen. Supt., Army Transport Service, A. E. F., France.

Greene, F. S. Capt., U. S. A., Co. B, 302d Engrs.

Greenfield, Robert A. Maj., Engineers, U. S. A.

Gregory, John H. Capt., Sanitary Corps, U. S. A.

Gregory, Luther E. Capt., Civil Engineer Corps, U. S. N.

Gregory, Whitney I. Capt., Engineers, U. S. A. (*Unassigned*).

Gregory, William B. Maj., Engineers, U. S. A., A. E. F., France.

Grehan, Bernard H. 1st Lieut., U. S. A., 312th Engrs.

Griffin, John Alden. Capt., U. S. A., Co. A, 316th Engrs.

Grigsby, Walter B. 1st Lieut., Engineers, U. S. A., 9th Engrs. (Mounted).

Grimes, James E. Capt., Quartermaster Corps, U. S. A.

Grindrod, Irvin S. 1st Lieut., Engineers, U. S. A. (*Unassigned*).

Griswold, Harry T. 2d Lieut., Coast Artillery, U. S. A.

Griswold, Hector C. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N.

Grodske, Walter J. Capt., Engineers, U. S. A.

Gross, Frederick H. 2d Lieut., Engineers, U. S. A., Co. B, 303d Engrs.

Gross, Henry McC. 1st Lieut., 149th Div., Machine Gun Bn., A. E. F., France.

Grunauer, Mortimer. Sergeant, Headquarters Co., 304th F. A., A. E. F., France.

Guillemette, Joseph D. 2d Lieut., Air Service, U. S. A., Air Service Depot No. 1, A. P. O. 702, A. E. F., France.

Gunther, Herman Dietrich. Co. B, 147th Inf.

Guppy, Benjamin Wilder. Maj., Engineers, U. S. A., 14th Engrs. (Ry.), A. E. F., France.

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* Awarded the Military Cross (British).

Guptill, Joseph R. Private, Co. E, 2d Bn., 23d Engrs., A. E. F., France.

Gutman, David. Maj., Engineers, U. S. A.

Haas, Philip L. Capt., Engineers, U. S. A.

Hains, Peter C. Maj.-Gen., U. S. A. (*Retired*).

Halcombe, N. M. Capt., Royal Flying Corps, Egypt.

Haldeman, Walter S. Capt., Engineers, U. S. A.

Hale, Richard King. Lt.-Col., 101st F. A., A. E. F., France.

Hall, Benjamin M., Jr. 1st Lieut., Engineers, U. S. A., Co. B, 26th Engrs., A. P. O. No. 701, A. E. F., France.

Hall, Charles L. Lt.-Col., Engineers, U. S. A., Headquarters, A. E. F., France.

Hall, Gilbert G. 1st Lieut., Engineers, U. S. A., 20th Engrs.

Hall, Julius R. 1st Lieut., Engineers, U. S. A., 515th Service Bn.

Hall, Louis W. Capt., Engineers, U. S. A., Care, Director of Const. and Forestry, S. O. S., P. O. 717, A. E. F., France.

Hall, Oliver Antrum. Capt., Engineers, U. S. A., 23d Engrs., U. S. A. P. O. 738, A. E. F., France.

Hall, Warren E. Capt., Engineers, U. S. A., Co. D, 506th Engrs. (Service Bn.), Base No. 2, A. E. F., France.

Hallberg, Arthur S. 1st Lieut., U. S. N. R. F., U. S. S. *Quinnebaug*.

Hallihan, John P. Maj., Engineers, U. S. A.

Halsema, E. J. Capt., Engineers, U. S. A.

Hamilton, Edward P. 2d Lieut., Field Artillery, U. S. A., 306th F. A.

Hammill, Harold B. Lieut.; Asst. Civ. Engr., U. S. N. R. F., U. S. Naval High Power Radio Detachment, U. S. N. P. O., Bordeaux, France.

Hammond, John M. Capt., Quartermaster Corps, U. S. A.

Hanavan, William L. 1st Lieut., 9th Inf.; Adjt., 2d Bn., A. E. F., France.

Hancock, Henry Sydney, Jr. Lieut., Royal Engrs.; Field Engr., First Corps, B. E. F., France.

Hanique, Jules E. Maj., Engineers, U. S. A., 537th Engrs., A. E. F., France.

Hansen, Paul. Capt., Engineers, U. S. A. Headquarters, Advance Section, S. O. S., Office of Chf. Engr., A. E. F., France.

Hapgood, Frederic H. Headquarters Co., 26th Engrs., A. E. F., France.

Hardaway, Benjamin H., Jr. Maj., U. S. A.

Harding, Chester. Lt.-Col., Engineers, U. S. A., Balboa Heights, Canal Zone, Panama.

Harding, Ralph L. Capt., Engineers, U. S. A., 35th Engrs.

Harley, Alfred F. Field Clerk, Engineers, U. S. A., A. E. F., France.

Harmon, W. G. Capt., Sanitary Corps, U. S. A.

Harps, Harry M. Capt., Engineers, U. S. A.

Harrah, O. W. Capt., Engineers, U. S. A., 319th Engrs.

Harrington, Arthur W. 1st Lieut., Sanitary Corps, U. S. A.

Harris, F. R. Rear-Admiral, U. S. N.

Harris, Frank S. M. Lieut., U. S. N. R. F.

Hart, S. A. 1st Lieut., Engineers, U. S. A., 23d Engrs.

Harter, A. F. Capt., Engineers, U. S. A., Co. B, 527th Engrs., A. P. O. 769, A. E. F., France.

Harts, William W. Brig.-Gen., U. S. A., G. H. Q., 1er Echelon, B. E. F., France.

Hasbrouck, Oscar. Capt., U. S. A., Co. B, 522d Engrs., P. O. 747, A. E. F., France.

Haskins, C. A. Capt., Sanitary Corps, U. S. A.

Haskins, John C. 1st Lieut., Engineers, U. S. A., 22d Engrs.

Hastings, R. P. 1st Lieut., Engineers, U. S. A., Co. D, 26th Engrs., A. E. F., France.

Hatch, Frederick N. Capt., Engineers, U. S. A., 35th Engrs., A. E. F., France.

Hauser, Kenneth D. Capt., 18th Engrs. (Ry.), A. E. F., France.

Hawley, John B. Maj., Engineers, U. S. A., 503d Engrs., Service Bn., A. E. F., France.

Hawley, Robinson Wilber. Capt., Engineers, U. S. A., 403d Engrs.

Hayes, F. Eugene, Jr. Chf. Carpenter's Mate, U. S. N.

Hays, Donald S. Capt., Engineers, U. S. A.

Hays, John Coffee. Maj., Quartermaster Corps, U. S. A.

Hazelton, W. S. Capt., Ordnance, U. S. A.

Hazlehurst, James Nisbet. Maj., Engineers, U. S. A., Headquarters, S. O. S., A. E. F., France.

Healey, Charles F. Capt., Engineers, U. S. A., A. P. O. No. 701, A. E. F., France.

Hebard, R. W. Maj., U. S. A., 5th Bn., 22d Engrs., A. E. F., France.

Heck, Nicholas H. Lieut., U. S. N. R. F.

Heed, Samuel D. Capt., Ordnance, U. S. A.

Hendricks, Ernest D. Capt., Engineers, U. S. A., Co. B, 303d Engrs.

Hendrie, John Gibson. Capt., Engineers, U. S. A.; Adjt., 2d Bn., 318th Engrs. (Sappers).

Henning, Charles S., Jr. Master Engr., Co. A, 21st Engrs., A. E. F., France.

Henry, Earle Underwood. 1st Lieut., Engineers, U. S. A., 116th Engrs., Care, D. G. T., A. P. O. No. 717, A. E. F., France.

Herington, George B. Maj., Air Service (Production), U. S. A.

Herkness, Lindsay C. Col., Engineers, U. S. A.

Herzig, Solon. 1st Lieut., Engineers, U. S. A., Co. F, 25th Engrs. A. E. F., France.

Heslop, D. G. Capt., Royal Engrs., O. C. Surveys, Light Rys., E. E. F., Palestine.

Heslop, Paul L. Private, Ordnance, U. S. A.

Heuer, W. H. Col., U. S. A. (*Retired*).

Hewett, M. W. 1st Lieut., Engineers, U. S. A., 508th Service Bn.

Hews, Wellington P. Capt., Engineers, U. S. A., 62d Engrs., A. E. F., France.

Higgins, Charles H. Maj., Ordnance, U. S. A.

Hilder, Frazer C. Capt., Engineers, U. S. A., Goring Hotel, Grosvenor Gardens, London, W. 1, England.

Hiles, Elmer K. Maj., 15th U. S. Engrs. (Ry.), A. E. F., France.

Hilton, Harry L. Lieut., Civil Engineer Corps, U. S. N. R. F.

Hinrichs, Adolf. 1st Lieut., Co. 5, E. O. T. S., Camp Humphreys, Va.

Hirzel, Alfred Sparks. Capt., 1st Delaware Inf.

Hjorth, Lawrence R. Raritan Ord. Depot, Metuchen, N. J.

Hoad, William C. Lt.-Col., Sanitary Corps, U. S. A.

Hoar, Allen. Civ. Engr., U. S. N. R. F.

Hobbs, Henry W. Maj., Engineers, U. S. A.

Hodge, Henry W. Col., U. S. A.; Asst. Chf. Engr., Am. Exp. Forces, A. P. O. 703, A. E. F., France.

Hodges, H. F. Maj.-Gen., U. S. A.

Hoffman, Eugene R. Private, Headquarters Detachment, 26th Engrs., A. E. F., France.

Hogan, John P. Capt., 11th Engrs. (Ry.), A. E. F., France.

Holborn, Lewis A. Lieut., U. S. A., 22d Engrs.

Hollman, John G. Capt., Engineers, U. S. A., Base Section No. 4, A. E. F., France.

Hollyday, R. C. Capt., Civil Engineers Corps, U. S. N.

Holmboe, L. S. 2d Lieut., Motor Transport Corps, U. S. A.

Holmes, Thomas H. Capt., U. S. A., 311th Engrs., A. E. F., France.

Holstlaw, Charles Henry. 1st Lieut., Infantry, U. S. A., 124th Inf.

Holt, Andrew H. Capt., Engineers, U. S. A.

Hoopes, Edgar M., Jr. Capt., Quartermaster Corps, U. S. A.

Hoover, A. Pearson. Maj., Constr. Div., Quartermaster Corps, U. S. A.

Hopkinson, George Martin. Capt., Quartermaster Corps, U. S. A.

Hopper, Jean G. L. Secy. to Capt. Escale, 3d Reg. de Marche, Ien Etranger (Foreign Legion), 43 Avenue de l'Opera, Paris, France.

Horton, C. K. Capt., Engineers, U. S. A.; Adjt., 2d Bn., 111th Engrs., A. E. F., France.

Horton, Dwight Fred. Capt., Engineers, U. S. A.

Hough, David L. Maj., Quartermaster Corps, U. S. A.

Howard, Conway Robinson. Capt., U. S. A., 17th Engrs. (Ry.), A. E. F., France.

Howard, Gerald B. 1st Lieut., Engineers, U. S. A., Co. E, 17th Engrs. (Ry.), A. E. F., France.

Howard, Robert C. Capt., Engineers, U. S. A.; Bn. Adjt., 138th Engrs.

Howe, H. F. Capt., Engineers, U. S. A.

Howe, Wilson Tyler. Capt., Quartermaster Corps, U. S. A.

Howell, Clarence S. Capt., Engineers, U. S. A.

Howell, Robert P. Capt., Quartermaster Corps, U. S. A.

Hoxie, Richard L. Brig.-Gen., U. S. A. (*Retired*).

Huber, Joseph E. Lieut., U. S. A.

Huber, William T. Capt., Engineers, U. S. A., Co. F, 212th Engrs., 12th Div.

Hudson, H. W. Maj., Staff of Director-Gen. of Transportation, Care, Director-Gen. of Transportation, A. E. F., France.

Hughes, George L. 2d Lieut., Engineers, U. S. A.

Huie, Irving V. A. Capt., U. S. A., Co. B, 1st Engrs., A. E. F., France.

Hulburd, L. S. Capt., Engineers, U. S. A.

Hull, George B. Maj., Canadian Forestry Corps, Care, C. H. Orme, Prince Rupert, B. C., Canada.

Hull, Gordon B. Gifford. Capt., Royal Engrs.; The Grange, Horton, Northampton, England.

***Hulsart, C. Raymond.** Capt., Co. B, 11th Engrs. (Ry.) A. E. F., France.

Humann, Edwin August. Private, Co. D, 4th Engrs.

Humphrey, Gilbert Edwin. Maj., Engineers, U. S. A.

Humphreys, Charles Raymond. Capt., U. S. A., 105th Engrs.

Humphreys, Ewing S. Capt., Engineers, U. S. A.

Hunt, Charles A. Lieut., Civil Engineer Corps, U. S. N. R. F.

Hunt, Conway B. Maj., Engineers, U. S. A. (*Unassigned*).

Hunt, Leigh A. Maj., 110th Engrs., A. E. F., France.

Hurlbut, H. B. Capt., Ordnance, U. S. A.

Hurley, John Patrick. Capt., Co. K, 165th Inf., A. E. F., France.

Husson, William M. Capt., U. S. A., 82d F. A.

Husted, Alva Guy. Capt., Sanitary Corps, U. S. A.

Huston, Tillinghast L'Hommedieu. Maj., Engineers, U. S. A., 1st Bn., 16th Engrs. (Ry.), A. E. F., France.

Hyde, Charles G. Capt., Sanitary Corps, U. S. A., Bn. 7, Co. 28.

Hyde, Richard Lewis. 2d Lieut., Engineers, U. S. A., 10th Engrs., A. E. F., France.

Hynds, Harold D. Capt., U. S. A.

Ingalls, O. L. Maj., Engineers, U. S. A.

Irish, Leland W. Master Engr., 42d Bn., 20th Engrs.

Jackson, Dugald C. Maj., Engineers, U. S. A., A. E. F., France.

Jackson, Jesse A. Maj., 116th Bn., 41st Div., Signal Corps, U. S. A.

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* Awarded the Distinguished Service Cross.

Jackson, W. B. Maj., Quartermaster Corps, U. S. A.

Jacobosky, Gilbert G. Capt., Engineers, U. S. A., Headquarters, 1st Bn., 55th Engrs., A. P. O. 738, A. E. F., France.

Jacobs, Joseph. Maj., Engineers, U. S. A., 509th Engrs. (Service Bn.), A. E. F., France.

Jacobsen, Hans R. Capt., U. S. A., 124th Engrs.

***Jacobson, Alfred Leon.** Capt., Commandant, 26me Batterie, 246me Reg. d'Artillerie de Campagne, Secteur Postal 30, Armée Française en Campagne, France.

Jacques, Henry L. Capt., Engineers, U. S. A.

Jaenicke, William H. 1st Lieut., Engineers, U. S. A.

James, Alfred R. 1st Lieut., Quartermaster Corps, U. S. A.

James, Frank T. Capt., Engineers, U. S. A.

James, Robert Lane. 2d Lieut., 17th Engrs. (Ry.), A. E. F., France.

Jaques, J. D. Lieut., Civil Engineers Corps, U. S. N. R. F.

Jasper, T. McLean. Capt., Imperial Forces; Director of Signalling, No. 2, R. G. A., Cadet School, Maresfield Park, Sussex, England.

Jenkins, Charles M. Capt., Engineers, U. S. A.

Jenkins, Jenks B. Maj., Engineers, U. S. A.

Jennings, Charles A. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Jennings, Percy J. Capt.; Adjt., 5th Pioneers Canadians (late 4th Pioneers), Care, Canadian Bank of Commerce, 2 Lombard St., London, E. C., England.

Jerrard, Leigh P. Capt., U. S. A., Headquarters, 67th Artillery Brigade, A. E. F., France.

Jervey, Henry. Brig.-Gen., U. S. A.

Jessup, Walter E. 1st Lieut., Engineers, U. S. A., Co. C, 39th Engrs.

Jewell, Albert Hartwell. 1st Lieut., Sanitary Corps, U. S. A., Co. F, 26th Engrs., A. E. F., France.

Jewett, Thomas E. Capt., Quartermaster Corps, U. S. A.

Johnson, Frank Melvin S. Capt., Engineers, U. S. A., 4th Div., 4th Engrs., A. E. F., France.

Johnson, George A. Lt.-Col., Quartermaster Corps, U. S. A., Constr. Div.

Johnson, Halbert T. Sergeant, 472d Engrs.

Johnson, Hollister. 2d Lieut., Engineers, U. S. A., Co. C, 1st Bn., 20th Engrs., A. E. F., France.

Johnson, J. M. Lt.-Col., 117th Engrs., A. E. F., France.

Johnson, Louis R. Capt., Engineers, U. S. A.

Johnston, Thomas S. Capt., Engineers, U. S. A.

Johnstone, Leslie I. 1st Lieut., Engineers, U. S. A.

Jonah, F. G. Lt.-Col., Engineers, U. S. A.; Chf. Engr., Div. of Light Rys. and Roads, U. S. A. P. O. 706, A. E. F., France.

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* Awarded the Croix de Guerre.

Jones, Harry E. Private, Aviation Section, Signal Corps, U. S. A., Meteorological Section.

Jones, Harvey W. Capt., Quartermaster Corps, U. S. A.

Jones, Henry L. Maj., Engineers, U. S. A. (*Unassigned*).

Jones, John H. Capt., 1st Canadian Pioneers, B. E. F., France.

Jones, Jonathan. Capt., Engineers, U. S. A., 23d Engrs.

Jones, Lewis Allen. Capt., Engineers, U. S. A.

Jones, Paul Sidney. 2d Lieut., Engineers, U. S. A.

Jones, Percival C. Corporal, Co. G, 23d U. S. Engrs., A. P. O. 716, A. E. F., France.

Jones, Sidney G. Capt., Engineers, U. S. A., Headquarters Co., 35th Engrs., A. P. O. 735, A. E. F., France.

Jordan, Harry E. Capt., Quartermaster Corps, U. S. A.

Joseph, Jacob. Private, Meteorological Section, Signal Corps, U. S. A., A. E. F., France.

Jouine, G. P. F. Sous Lieut. au 81eme Regt. d'Artillerie, A. S. No. 499, par Convois Automobiles, Paris, France.

Judson, William V. Brig.-Gen., U. S. A.

Kane, Daniel C. 1st Lieut., Engineers, U. S. A., 466th Pontoon Train.

Kane, Irving P. Capt., Engineers, U. S. A., 45th Engrs., A. E. F., France.

Karnopp, Edwin B. Capt., Engineers, U. S. A., 2d Bn., 22d Engrs.

Kastenhuber, E. G., Jr. Capt., Sanitary Corps, U. S. A.

Kaufmann, Ernst G. Private, 499th Aero Squadron.

Keenan, John T. Maj., Engineers, U. S. A., 2d Bn., Headquarters, 28th Engrs. (Quarry), A. E. F., France.

Keith, Gerald Marcy. Lieut., Engineers, U. S. A., Co. B, 116th Engrs., A. E. F., France.

Keller, Arthur R. Capt., Engineers, U S. A.

Keller, Charles. Col., Engineers, U. S. A.

Kelley, James A. Maj., Engineers, U. S. A.

Kelly, Earl W. Capt., Engineers, U. S. A., 1st Punishment Bn., A. P. O. 774, A. E. F., France.

Kelly, Hugh Ambrose. Lieut., Engineers, U. S. A.

Kelly, William. Col., Engineers, U. S. A., 117th Engrs., A. E. F., France.

Kemp, John E. Capt., Engineers, U. S. A.; Chf. Engr., Ordnance Depot in France, Care, J. H. Hood, 4 rue d'Auber, Paris, France.

Keys, Edward A. Capt., Engineers, U. S. A., Co. C, 511th Engrs. (Service Bn.), U. S. A. P. O. 738, A. E. F., France.

Khachadoorian, H. H. 1st Lieut., Engineers, U. S. A., Co. C, 55th Engrs., A. E. F., France.

King, Clifford M. Capt., Engineers, U. S. A., 313th Engrs.

King, Eric T. Maj., Quartermaster Corps, U. S. A.

King, Howard L. 2d Lieut., Engineers, U. S. A., Co. B, 27th Engrs.

King, Thomas R. 1st Lieut., Engineers, U. S. A., 316th Engrs., A. E. F., France.

King, W. S. Capt., Quartermaster Corps, U. S. A.

Kingsley, E. A. Maj., Engineers, U. S. A., A. E. F., France.

Kingsley, George. Capt., Engineers, U. S. A.

Kinne, G. W. Capt., Engineers, U. S. A.

Kinnear, Lawrence W. 2d Lieut., Aviation Section, Signal Corps, U. S. A.

Kipp, Frederick M., Jr. 33d Engrs., U. S. A.

Kirby, Luther H. Capt., Engineers, U. S. A.

Kissack, A. B. Capt., Engineers, U. S. A.

Kitchen, Ernest. 1st Lieut., Engineers, U. S. A.

Kittredge, Frank A. Capt., U. S. A., 48th Co., 20th Engrs., A. E. F., France.

Kittredge, Harry C. Capt., Engineers, U. S. A.

Kitts, Joseph A. Capt., Engineers, U. S. A., U. S. A. P. O. 701, A. E. F., France.

Kleinschmidt, H. S. Capt., Engineers, U. S. A.

Klinck, J. H. Maj., Quartermaster Corps, U. S. A.

Kluegel, Harry A. Maj., Quartermaster Corps, U. S. A.

Knight, G. W. Capt., Engineers, U. S. A., 46th Engrs., A. E. F., France.

Kniskern, Philip Wheeler. Capt., Engineers, U. S. A.

Knollman, Enno P. Ensign, U. S. N. R. F.

Knost, W. A. 1st Lieut., Coast Artillery, U. S. A.

Knox, Jean H. Lieut., U. S. N. R. F., Civ. Engrs.' Naval Air Forces.

Kohl, Frank E., Jr. Sergeant, Co. C, 302d Engrs., A. E. F., France.

Koop, Louis D. Capt., Quartermaster Corps, U. S. A.

Krach, Fred R. Private, Co. A, 23d Engrs.

Kreamer, A. W. 1st Lieut., Engineers, U. S. A. (*Unassigned*).

Krigbaum, Lowell G. 1st Lieut., Engineers, U. S. A., Care, Director of C. and F., A. E. F., France.

Kromer, Clarence H. 1st Lieut., U. S. A., 403d Engrs.

Kutz, Charles W. Brig.-Gen., U. S. A.

La Bach, Paul M. Maj., Engineers, U. S. A., A. E. F., France.

Labsap, Alfred H. 1st Lieut., Engineers, U. S. A., 114th Engrs.

La Forge, Frederick W. Maj., Engineers, U. S. A.

Lake, Edward N. Maj., Quartermaster Corps, U. S. A.

Lambert, Byron J. Maj., Engineers, U. S. A., 23d Engrs. (Highway).

Lamphere, Frank E. Col., Quartermaster Corps, U. S. A.

Lamson, William M. Maj., Engineers, U. S. A., 306th Engrs.

Lancashire, Forest H. Capt., Engineers, U. S. A.

Lane, Albert L. Capt., U. S. A., 50th Inf.

Lane, E. W. 2d Lieut., Air Service (A.), U. S. A.

Lansdale, John. Maj., Engineers, U. S. A., Care, D. of C. and F., A. P. O. 717, A. E. F., France.

La Roche, Arthur L. 1st Lieut., Engineers, U. S. A., A. E. F., France.

Larrison, George K. Capt., Engineers, U. S. A., Headquarters, Hawaiian Dept., U. S. A., Honolulu, Hawaii.

Lathbury, Benjamin Brentnall. Lt.-Col., Ordnance, U. S. A.

Laughlin, Harmon L. Capt., Engineers, U. S. A.; Topographical Officer, 108th Engrs.

Laverty, Samuel Perry. Regt. Sup. Sergeant, 316th Am. Tr.

Lawrence, Frank Elmaker. Capt., 17th Engrs. (Ry.), A. E. F., France.

Lawton, Richard M. Maj., Engineers, U. S. A., A. P. O. 721, A. E. F., France.

Lea, Sumter, Jr. 1st Lieut., Quartermaster Corps, U. S. A.

Learned, A. P. 1st Lieut., Sanitary Corps, U. S. A.

LeBaron, R. W. P. 1st Lieut., Co. C, 13th Engrs. (Ry.), A. E. F., France.

Leckie, Alexander R. Capt., U. S. A., 111th Engrs.

Lee, Alonzo Church. 1st Lieut., Infantry, U. S. A., 17th Machine Gun Bn., A. E. F., France.

Lee, Augustine L. Maj., U. S. A.; C. O., 504th Engrs.

Lee, Charles A. Lieut., Civil Engineers Corps, U. S. N. R. F.

Lee, Charles H. Capt., Engineers, U. S. A., Headquarters, 26th Engrs., A. E. F., France.

Lee, John Louis. Maj., Quartermaster Corps, U. S. A.

Leeds, Charles T. Maj., Engineers, U. S. A.

Lehrbach, Henry G. Lieut., Civil Engineer Corps, U. S. N.

Leisen, Theodore A. Maj., Quartermaster Corps, U. S. A.

Leiser, F., Jr. 30th Tr. Bn., Field Artillery Central Officers' Training School, Camp Zachary Taylor, Ky.

Leland, O. M. Lt.-Col., Engineers, U. S. A., 303d Engrs., A. E. F., France.

Lemen, William C. S. Lt.-Col., Engineers, U. S. A.

Leonard, O. Y. 1st Lieut., Ordnance, U. S. A.

Letton, Harry P. Capt., Engineers, U. S. A., A. E. F., France.

Lewis, Charles Granville. Private, Co. A, 21st Engrs., A. E. F., France.

Lewis, Chester B. 1st Lieut., U. S. A., 564th Engr. Service Bn.

Lewis, F. H. Maj., Engineers, U. S. A.

Lewis, Harold McLean. 1st Lieut., U. S. A., Co. A, 502d Engrs., A. E. F., France.

Lewis, Luther H. Maj., Quartermaster Corps, U. S. A.

Lightner, George W. C. Capt. and Supply Officer, 21st Engrs. (Light Ry.), A. E. F., France.

Lilly, Ridgely C. Lieut., Engineers, U. S. A. (*Unattached*), A. E. F., France.

Lindhé, John B. Lieut., U. S. N. R. F., P. O. Box 781, Balboa, Canal Zone, Panama.

Lineberger, Walter Franklin. Capt., Engineers, U. S. A.

Linsley, Charles Wells. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N. R. F.

Lipari, A. F. 2d Lieut., Air Service (Aeronautics), U. S. A.

Lisman, Oliver C. 1st Lieut., Engineers, U. S. A., 13th Engr. Service Co., U. S. A. P. O. 717, A. E. F., France.

Livermore, Norman B. Capt., Engineers, U. S. A., A. E. F., France.

Livingston, Archibald R. Maj., Engineers, U. S. A., 115th Engrs.

Lockhardt, William Francis. 1st Lieut., Quartermaster Corps, U. S. A.

Lockwood, Richard J. Capt., U. S. A., Dept., Light Rys. and Roads, A. P. O. 706, A. E. F., France.

Logan, Chester R. Capt., Co. C, 502d Engrs., A. E. F., France.

Logan, Vernon L. 1st Lieut., Engineers, U. S. A., Co. B, 530th Engrs. (Service Bn.), A. E. F., France.

Longley, Francis F. Lt.-Col., U. S. A., 26th Engrs., A. E. F., France.

Lord, Arthur R. Capt., Engineers, U. S. A.

Losh, A. R. Capt., Chemical Warfare Service, U. S. A.

Louckes, Frank I. Capt., Engineers, U. S. A., Inland Water Transportation Service, A. P. O. 702, A. E. F., France.

Loughran, James F. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N. R. F.

Lovering, Harry D. Capt., Engineers, U. S. A.

Lowe-Brown, William L. Lt.-Col., R. E. (British Army), River Plate House, Finsbury Circus, London, E. C. 2, England.

Luiggi, Luigi. Col.; Insp. of Munition Factories in Central Italy, Via Bonconpagni 17, Rome, Italy.

Lumsden, Hugh J. Capt., Quartermaster Corps, U. S. A.

Lund, Alfred M. Maj., Sanitary Corps, U. S. A.

Lundgren, Leonard. Capt., 116th Engrs., A. P. O. 714, A. E. F., France.

Lynch, John F. Capt., Engineers, U. S. A., Co. D, 1st Bn., 1st Replacement Engrs.

Lyon, George J. Capt., Engineers, U. S. A.

Lyon, Léon E. Lt.-Col., Transportation Corps, Inland Water Transport, Transportation Service, A. E. F., France.

Lyons, Harold C. 1st Lieut., Engineers, U. S. A., Co. B, 1st Bn., 20th Engrs., A. E. F., France.

Macartney, Morton. Maj., Quartermaster Corps, U. S. A.

MacDiarmid, Milo S. Maj., Engineers, U. S. A.

MacGlashan, Alexander. Maj., U. S. A., 104th Engrs., A. P. O. 765, A. E. F., France.

Machen, Henry B. Maj., Ordnance, U. S. A.

Macintosh, P. H. M. Capt., Tropical Force (Australia), Officers' Camp, British Prisoners of War, Heidelberg, Germany.

Mackenzie, Alexander. Maj.-Gen., U. S. A. (*Retired*).

Mackenzie, Leon R. Capt., Quartermaster Corps, U. S. A.

MacNaughton, Percival J. Asst. Civ. Engr., U. S. N. R. F.

Macomb, John de N., Jr. Capt., Engineers, U. S. A., A. E. F., France.

McCalla, W. A. Maj., Engineers, U. S. A., 504th Engr. Bn. (Service), A. E. F., France.

McCandliss, Edgar S. Capt., Engineers, U. S. A., 314th Engrs.

McCandliss, L. C. 1st Lieut., Co. D, 15th Engrs. (Ry.), Field Headquarters, A. E. F., France.

McClean, George Thomas. Capt., Engineers, U. S. A., 29th Engrs., A. P. O. 702, A. E. F., France.

McClellan, George A. Lieut., Aviation Section, Signal Corps, U. S. A.

McClintock, Hallett Edward. Capt., Engineers, U. S. A., Care, D., C., and F., A. P. O. 717, A. E. F., France.

McClure, Harry C. Capt., Ordnance, U. S. A.

McComb, Dana Quick. Maj., Engineers, U. S. A.; Engr. Officer in Local Charge of Heavy Fortification and Land Defense Constr., Corregidor, Philippine Islands.

McConnell, Edward Herbert. 1st Lieut., Engineers, U. S. A., A. E. F., France.

McCrone, R. M. 1st Lieut., U. S. A.

McCullough, Ernest. Maj., Engineers, U. S. A., Gas Service, Headquarters, A. E. F., France.

McDermith, Oro. Capt., Engineers, U. S. A.

McDonald, Harry L. Capt., Engineers, U. S. A.

McDonald, W. N. Capt., Engineers, U. S. A.

McDonnell, Francis R. Lieut. (Junior Grade), U. S. N. R. F.

McDonough, Michael J. Col., Engineers, U. S. A.

McFarland, H. F., Jr. 1st Lieut., Co. F, 12th Engrs. (Ry.), A. E. F., France.

McGee, Arthur B. 1st Class Sergeant, Ordnance, U. S. A., Nitrate Div.

McGee, Harold G. Capt., Sanitary Corps, U. S. A.

McGee, Roger K. Capt., Engineers, U. S. A.

McGeehan, Paul. Capt., Co. D, 12th Engrs. (Ry.), A. E. F., France.

McGlathery, Sam L. Capt., Engineers, U. S. A., 312th Engrs., A. E. F., France.

McGregor, Robert Roy. Maj., Engineers, U. S. A.

McGrew, John A. Maj., Quartermaster Corps, U. S. A.

McIntosh, Samuel F. Capt., Ordnance, U. S. A.

McIntyre, Lewis W. 2d Lieut., Coast Artillery, U. S. A.

McKay, George A. Commander, Civil Engineer Corps, U. S. N.

McKenney, Charles A. Col., Engineers, U. S. A.

McKinstry, Charles Hedges. Brig.-Gen., U. S. A., 67th F. A. Brigade, A. E. F., France.

McLane, G. L. Capt., Engineers, U. S. A.; Adjt., 110th Engrs., 35th Div., A. E. F., France.

***McLoud, Paul.** 1st Lieut., Engineers, U. S. A., Co. F, 11th Engrs., A. E. F., France.

McMeekin, Charles William. Maj., Engineers, U. S. A.

McMillan, W. Bruce. 1st Lieut., Engineers, U. S. A., A. E. F., France.

McMullen, Clements. Lieut., Aviation Section, Signal Corps, U. S. A.

McNayr, George E. 2d Lieut., Engineers, U. S. A., 33d Engrs.

McRae, H. C. 1st Lieut., Engineers, U. S. A., 45th Engrs., A. E. F., France.

Maddock, Thomas. 1st Lieut., U. S. A., 43d Engrs.

Maddox, L. R. Capt., Engineers, U. S. A., U. S. Disposition Officer and Asst. to Regulating Officer, Regulating Station "A," U. S. P. O. No. 712, A. E. F., France.

Madison, James T. 1st Lieut., Engineers, U. S. A.

Mahon, John M., Jr. Capt., Tank Corps, U. S. A., Commanding 310th Brigade Headquarters.

Mail, Eugene Frederick. 1st Lieut., Engineers, U. S. A., 4th Engrs.

Malloy, John Michael. Lieut., U. S. A., 342d F. A.

Malone, George W. Lieut., U. S. A., 145th F. A., A. E. F., France.

Malsbury, Omer Evert. Capt., Engineers, U. S. A., 3d Engrs., Corozal, Canal Zone, Panama.

Maltby, Frank B. Maj., Engineers, U. S. A., Care, Section Engr. Officer, Base No. 1, A. P. O. 701, A. E. F., France.

Mangold, John Frederic. Capt., Engineers, U. S. A. (*Unassigned*).

Manning, William J. H. 2d Lieut., Engineers, U. S. A., 52d Engrs., A. E. F., France.

Mansfield, Newton. Lt.-Commander, U. S. N. (*Retired*).

March, George Miles. 1st Lieut., Engineers, U. S. A., 507th Engrs.

Marks, Edwin H. Lt.-Col., Engineers, U. S. A., 20th Engrs.

Marrian, Ralph R. 2d Lieut., Engineers, U. S. A., Co. B, 105th Engrs.

Marshall, Robert B. Lt.-Col., Engineers, U. S. A.

Marston, Anson. Lt.-Col., Engineers, U. S. A., 97th Engrs.

Martin, James Walter. Capt., Engineers, U. S. A.

Marx, Raymond. 2d Lieut., Co. K, 308th Inf., A. E. F., France.

Maslen, Harold C. Ensign, U. S. N. R. F.

Massei, Caesar. Maj., Engineers, U. S. A., 22d Engrs.

Massey, George B. Lieut. (Junior Grade), U. S. N. R. F.

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* Awarded the Distinguished Service Cross.

Massey, Walter F. Sergeant, Co. B, 129th Engrs., A. E. F., France.

Masters, F. M. Maj., Ordnance, U. S. A.

Maul, Theodore R. Capt., Quartermaster Corps, U. S. A., A. E. F., France.

Maury, Dabney H. Lt.-Col., Quartermaster Corps, U. S. A.

Maxson, Frank O. Capt., Civil Engineer Corps., U. S. N. (*Retired*).

Mayo, George. Capt., Engineers, U. S. A., 5th Engrs.

Mazeau, Camille. 1st Lieut., Coast Artillery, U. S. A., Battery F, 56th Artillery.

Means, John S. 1st Lieut., Engineers, U. S. A., Care, Chf. Engr.'s Office, A. P. O. 717 (Tours), A. E. F., France.

Mears, Frederick. Col., U. S. A., 31st Engrs., A. P. O. 718, Care, D. G. T., A. E. F., France.

Mechlin, O. A. Lt.-Commander, U. S. N. R. F.

Melin, Reynold F. Capt., Ordnance, U. S. A.

Mellon, Albert E. Capt., Heavy Artillery, U. S. A., A. E. F., France.

Melton, Arthur Pomeroy. Capt., Engineers, U. S. A., Headquarters, Lines of Communication, A. E. F., France.

Mendenhall, Herbert D. Capt., Engineers, U. S. A., U. S. M. P. O. 705, A. E. F., France.

Menefee, Ferdinand N. Maj., Ordnance, U. S. A.

Mengel, Carl W. 1st Lieut., Engineers, U. S. A., Co. B, 306th Engrs.

Merckel, Frederick G. 2d Lieut., Sanitary Corps, U. S. A., 302d Water Tank Train, A. E. F., France.

Merriam, C. A. Capt., Engineers, U. S. A.

Mershon, Ralph D. Maj., Engineers, U. S. A.

Messer, Hope Richard. Maj., Quartermaster Corps, U. S. A.

Miles, George Frederick. Capt., Engineers, U. S. A.; Adjt., 8th Bn., 20th Engrs., A. E. F., France.

Milhan, David N. 1st Lieut., Engineers, U. S. A., Co. F, 106th Engrs.

Milkowski, V. J. 2d Lieut., Engineers, U. S. A.

Miller, Charles H. Maj., Engineers, U. S. A., 23d Engrs., 2d Bn., A. E. F., France.

Miller, Daniel C. 1st Lieut., Engineers, U. S. A.

Miller, George S. Maj., Engineers, U. S. A.

Miller, Hugh. Capt., Engineers, U. S. A.

Miller, John O. 2d Lieut., Infantry, U. S. A.

Miller, K. A. Sergeant, Co. F, 603d Engrs., A. E. F., France.

Millis, John. Col., Engineers, U. S. A.

Mills, Guy G. Capt., Engineers, U. S. A.

Miner, Erwin J. Capt., Engineers, U. S. A., 528th Engrs., Service Bn.

Minniss, George S. Maj., U. S. A., 6th Anti-Aircraft Machine Gun Bn.

Mitchell, Charles H. Lt.-Col., D. S. O., C. M. G., General Staff Headquarters, 2d Army, B. E. F., Care, Army Post Office, London, England.

Molitor, Frederic. Col., U. S. A., 22d Engrs., A. P. O. 717, A. E. F., France.

Moller, Irving C. Maj., Engineers, U. S. A., 23d Engrs.

Moncrieff, John M. Lt.-Col., C. B. E., R. E., 17 Waterloo Pl., London, S. W., England.

Monk, Percy S. 1st Lieut., Engineers, U. S. A., Co. F, 2d Bn., 604th Engrs., A. E. F., France.

Monroe, Robert A. Capt., Engineers, U. S. A., 4th Engrs., 4th Div., A. E. F., France.

Montgomery, Albertis. 1st Lieut., Engineers, U. S. A.

Moore, James A. Capt., Engineers, U. S. A., Headquarters, 2d Bn., 110th Engrs., A. E. F., France.

Moore, Lewis E. Capt., Engineers, U. S. A., A. E. F., France.

More, Charles C. Maj., Ordnance, U. S. A.

Morelock, John Earl. 2d Lieut., Engineers, U. S. A., 116th Engrs., Care, Engr. Purchasing Office, U. S. P. O. 702, A. E. F., France.

Morey, Edward F. Capt., Field Artillery, U. S. A.

Morgan, Thomas C. Sergeant, Battery C, 304th F. A., A. E. F., France.

Moriarty, Clarence. 1st Lieut., Engineers, U. S. A.

Morrow, B. S. Capt., Engineers, U. S. A., Co. B, 529th Engrs., A. E. F., France.

Morrow, D. C. Capt., Quartermaster Corps, U. S. A.

Morrow, Jay J. Brig.-Gen., U. S. A., A. E. F., France.

Morrow, Samuel Roy. 1st Lieut., Engineers, U. S. A.

Morton, L. L. Capt., Engineers, U. S. A., Co. A, 7th Engrs., A. E. F., France.

Moss, Castle P. Corporal (Reg. No. 2213329), No. 3 Co., 6th Bn., Canadian Ry. Troops, B. E. F., France.

Moss, William B. Capt., Engineers, U. S. A., Co. D, 528th Engrs.

Mower, Harrison C. Lt.-Col., Headquarters Staff, 307th Engrs., A. E. F., France.

Muckleston, H. B. Capt., 1st Bn., Canadian Ry. Troops, B. E. F., France.

Muenster, R. A. Science and Research Div., Aviation Section, Signal Corps, U. S. A.

Muirhead, J. H. H. Lieut., Royal Engrs., Overseas Club, Aldwych, W. C. 2, London, England.

Muñoz, Gonzalo C. Maj., Ordnance, U. S. A.

Murphy, Alvin R. Capt., Engineers, U. S. A., Water Supply Service, A. E. F., France.

Murphy, Fred E. Capt., Ordnance, U. S. A.

Murphy, James J. Capt., Engineers, U. S. A., Co. D, 523d Engrs., A. E. F., France.

Murray, Everett B. Maj., Engineers, U. S. A.

Murray, Fenwick Hall. 1st Lieut., Engineers, U. S. A.

Musham, John William. Capt., Engineers, U. S. A., Co. A, 513th Engrs., A. P. O. No. 738, A. E. F., France.

Nagler, Floyd A. Lieut., Meteorological Section, Signal Corps, U. S. A.

Nance, A. W. 2d Lieut., Ordnance, U. S. A.

Nash, F. D. 1st Lieut., 12th Engrs. (Ry.), A. E. F., France.

Needham, E. S. Corporal, Co. A, 43d Engrs., A. E. F., France.

Neel, Arthur Wood. Capt., Railroad Transportation Corps, U. S. A., U. S. A. P. O. No. 717, A. E. F., France.

Nelson, Clarence L. Capt., Coast Artillery, U. S. A., Headquarters, 1st Brigade, A. E. F., France.

Neuman, David L. Maj., Engineers, U. S. A.

Neville, C. W. J. Commander, U. S. N. R. F.

Newhall, William Barrett. Capt., Engineers, U. S. A.

Newton, Jewett B. Capt., Field Artillery, U. S. A.

Newton, John P. Capt., Engineers, U. S. A., A. P. O. 731, A. E. F., France.

Nial, William A. Capt., Engineers, U. S. A.

Nichols, Arthur C. Sergeant, Co. B, 45th Engrs.

Nichols, Charles H. Maj., Engineers, U. S. A.

Niles, Alfred Salem, Jr. 2d Lieut., Engineers, U. S. A.

Nimmo, James Valence. Capt., Royal Engrs., Care, Henry S. King & Co., 9 Pall Mall, London, W., England.

Nixon, Courtland. Maj., U. S. A.

Nolan, S. F. Maj., Coast Artillery, U. S. A.

Noland, C. P. Capt., Engineers, U. S. A., 1st Engrs., A. E. F., France.

Nordwell, Alfred Worcester. Capt., Engineers, U. S. A.

Norris, Claire G. 1st Lieut., U. S. A., 3d Brigade, 55th Engrs.

North, Robert G. Capt., U. S. A., 605th Engrs.

Noska, G. A. Capt., Engineers, U. S. A., 303d Engrs. (Sappers).

Nowlin, Robert A. 2d Lieut., Engineers, U. S. A.

Noyes, Arthur Page. Capt., Quartermaster Corps, U. S. A., A. E. F., France.

Noyes, Stephen Henley. Capt., U. S. A., Aviation Corps, A. E. F., France.

Oakes, John C. Col., U. S. A., 5th Engrs.

Ober, Ralph H. Capt., Engineers, U. S. A.

O'Connell, George P. Capt., Engineers, U. S. A.

Odoni, Vincent P. Asst. Civ. Engr., U. S. N. R. F.

Ogden, Merton M. Lieut., Engineers, U. S. A., Co. D, 33d Engrs., A. P. O. 708, A. E. F., France.

Okes, Day I. Maj., Engineers, U. S. A.

Olberg, Charles R. Capt., Engineers, U. S. A.

O'Meara, Robert J. 1st Lieut., U. S. A., 26th Engrs.

Opdycke, Henry G. Maj., Signal Corps, U. S. A.

Openshaw, John E. Lieut., Canadian Engrs., C. E. F.; 88 Church Hill, Westmount, Que., Canada.

Orbeck, M. J. Capt., Engineers, U. S. A., Headquarters, 528th Engrs. Service Bn., A. P. O. 747, A. E. F., France.

O'Rourke, Bernard J. 1st Lieut., Aviation Section, Signal Corps, U. S. A., 5th Constr. Bricklaying Co., U. S. Air Service, A. E. F., France.

Ort, A. A. L. Ensign, Civil Engineer Corps, U. S. N. R. F.

Osborne, George F. F. Maj., Royal Engrs. (British Army); 221 George St., Toronto, Ont., Canada.

Ostrom, C. D. Y. Capt., Coast Artillery, U. S. A., Headquarters, 64th Artillery, A. E. F., France.

Ostrup, John C. Maj., Engineers, U. S. A.

Outwater, Herbert Gregor. Capt., Sanitary Corps, U. S. A.

Owen, Elijah Hunter. Capt., Engineers, U. S. A.

Oxer, George C. Maj., Engineers, U. S. A., A. E. F., France.

Page, Edwin R. 1st Lieut., Aviation Section, Signal Corps, U. S. A., A. E. F., France.

Pagon, William Watters. Capt., Quartermaster Corps, U. S. A.

Painter, Pennell C. Capt., Engineers, U. S. A., Co. D, 524th Engrs., A. E. F., France.

Parker, Henry B. Paimboeuf, Loire, Inf., Care, Postmaster, New York City.

Parker, James. 1st Lieut., U. S. A., 13th Cav.

Parker, James L. Capt., Engineers, U. S. A.

Parker, William E. Lt.-Commander, U. S. N. R. F.

Parks, C. W. Rear-Admiral, Civil Engineer Corps, U. S. N.; Chf. of Bureau of Yards and Docks, Navy Dept.

Parsons, Archibald Livingstone. Commander, Civil Engineer Corps, U. S. N.

Parsons, Charles E. Capt., Engineers, U. S. A.

Parsons, Harold A. Capt., Quartermaster Corps, U. S. A.

Parsons, William Barclay. Lt.-Col., 11th Engrs. (Ry.), A. E. F., France.

Partridge, John F. Lieut., Engineers, U. S. A., Co. I, 23d Engrs., A. E. F., France.

Patrick, M. M. Maj.-Gen., U. S. A.; Chf. of Air Service, A. E. F., France.

Patstone, Lewis F. Maj., Engineers, U. S. A.

Patterson, C. S. Lieut., Engineers, U. S. A., 113th Engrs.

Patterson, Laurence. 1st Lieut., Quartermaster Corps, U. S. A., Utilities Detachment.

Payne, Edwin V. R. Lt.-Col., 25th Engrs., A. P. O. No. 716, A. E. F., France.

Payne, Louis W. Master Engr., Senior Grade, Headquarters Co., 2d Bn., 22d Engrs., A. E. F., France.

Pearce, R. B. 1st Lieut., Engineers, U. S. A.

Pease, H. T. Capt., U. S. A., 316th Trench Mortar Battery.

Peck, John S. 2d Lieut., Air Service, U. S. A.

Pendleton, Thomas Percy. Lieut., Engineers, U. S. A.

Pennell, J. Roy. Capt., Engineers, U. S. A., Co. A, 117th Engrs., A. E. F., France.

Pense, E. H. Lieut., Canadian Corps, Tramway Co. No. 2, C. E., France.

Perkins, A. H. Capt., Engineers, U. S. A., 17th Engrs. (Ry.), A. E. F., France.

Perkins, Roscoe, Jr. 2d Lieut., U. S. A., 4th Regt., Battery F, F. A. R. D., Camp Zachary Taylor, Ky.

Perkins, Seth, Jr. 2d Lieut., Field Artillery, U. S. A., 11th F. A.

Perrin, Lester W. Capt., U. S. A., 301st Inf.

Perrine, George. Maj., Quartermaster Corps, U. S. A.

Perry, Arthur Franklin, Jr. 2d Lieut., Coast Artillery, U. S. A., Battery B, 64th Artillery.

Perry, Charles E. Maj., Engineers, U. S. A.

Perry, F. W. Maj., Engineers, U. S. A.

Perry, Lynn E. 1st Lieut., Sanitary Corps, U. S. A.

Peters, Albert A. Maj., Engineers, U. S. A., Regimental Headquarters, 23d Engrs., U. S. A. P. O. 708, A. E. F., France.

Phalan, J. J. F. 1st Lieut., Engineers, U. S. A.

Philips, Hector S. Lieut., E. T. D., St. Johns, Que., Canada.

Philips, J. H. Maj., Quartermaster Corps, U. S. A.

Phillips, Walter B. Capt., Quartermaster Corps, U. S. A.

Phipps, T. E. Capt., Engineers, U. S. A.

Pickett, Frank Hurd. 1st Lieut., Engineers, U. S. A., 1st Replacement Engrs.

Pierce, Charles W. Ensign, Civil Engineer Corps, U. S. N., U. S. S. *Pittsburgh.*

Pierce, P. L. Lt.-Col., Ordnance, U. S. A., Care, C. P. O., U. S. Army P. O. 702, A. E. F., France.

Pierce-Hope, John. (French Army), Conducteur, S. S. A., Convoi d'Automobiles, B. C. M., Paris, France.

Pill, Leon Morley. Capt., Engineers, U. S. A.; Adjt., 1st Bn., 20th Engrs., A. E. F., France.

Pillsbury, G. B. Col., U. S. A., 115th Engrs.

Pirnie, H. Malcolm. Lieut.; Asst. Engr., Headquarters, Director-General of Transportation, A. E. F., France.

Plank, David Harlan. 1st Lieut., Engineers, U. S. A., Co. B, 310th Engrs.

Plumer, Harold E. Maj., Quartermaster Corps, U. S. A., Constr. Div.

Pond, Frederick H. 1st Lieut., U. S. A., Co. F, 34th Engrs., A. P. O. 701, A. E. F., France.

Poole, J. H. Col., Gen. Staff, Services of Supply, U. S. A., A. E. F., France.

Poorman, A. P. Capt., Engineers, U. S. A., Co. A, 29th Engrs., Topographic Section, Intelligence Div., A. E. F., France.

Porter, Elmer A. 1st Lieut., U. S. A.

Porter, H. G. Capt., Sanitary Corps, U. S. A.

Porter, Ralph W. 1st Lieut., Engineers, U. S. A.

Post, A. J. 2d Lieut., Quartermaster Corps, U. S. A., Constr. Div.

Post, William S. Maj., Engineers, U. S. A., 316th Engrs.

Potter, Charles L. Col., Engineers, U. S. A.

Powell, A. O. Lt.-Col., Engineers, U. S. A.

Powell, H. J. Bingham. Staff Officer, British Ministry of Munitions in United States, 165 Broadway, Room 2700, New York City.

Powell, Thomas J. Maj., Engineers, U. S. A., 99th Engrs.

Powell, W. J. Capt., Engineers, U. S. A., Co. A, 66th Engrs.

Powelson, W. V. N. Lt.-Commander, U. S. N.

Praeger, Emil. Lieut., Civil Engineer Corps, U. S. N.

Pratt, Arthur H. Maj., Engineers, U. S. A., Care, Chf. Engr., 2d Army, A. E. F., France.

Preston, Harry L. Capt., Engineers, U. S. A., 22d Engrs.

Price, Philip W. Lieut., U. S. A., Battery D, 3d F. A., A. E. F., France.

Price, W. E. Capt., Quartermaster Corps, U. S. A.

Prindle, Franklin C. Rear-Admiral, Civil Engineer Corps, U. S. N (*Retired*).

Pritchard, J. C. 1st Lieut., Engineers, U. S. A., 26th Engrs.

Proctor, R. F. Lt.-Col., Quartermaster Corps, U. S. A.

Pruett, G. C. Capt., Engineers, U. S. A.

Puckett, Homer. Capt., Engineers, U. S. A.

Pugh, Marshall R. Maj., 21st Engrs. (Light Ry.), A. E. F., France.

Pulligny, J. L. de. (Commandant); Chef de Bataillon du Genie Horscardres, French Army, 40 rue Barbey de Jouy, Paris, VII, France.

Pung, William Sing-Chong. 2d Lieut., Engineers, U. S. A.

Purcell, Steuart. Capt., Engineers, U. S. A.

Quilty, T. Frank. Maj., Engineers, U. S. A.

Quinby, Edwin R. Headquarters, A. E. F., France.

Quinlan, George A. Maj., U. S. A., 113th Engrs.

Quinn, John I. 1st Lieut., Engineers, U. S. A., A. P. O. 766, Mobile, A. E. F., France.

Quinn, Matthew F. Maj., Engineers, U. S. A.

Quinn, Richard. Maj., Engineers, U. S. A. (*Unassigned*), Honolulu, Hawaii.

Quinn, Thomas F. 1st Lieut., Engineers, U. S. A., 15th Engrs., U. S. A. P. O. 741, A. E. F., France.

Rader, Frank K. 1st Lieut., Engineers, U. S. A.

Rader, James W. 2d Lieut., Aviation Section, Signal Corps, U. S. A.

Rakestraw, C. L. 1st Lieut., Engineers, U. S. A., 4th Engrs.

Randolph, John Hampden, Jr. Capt., Engineers, U. S. A., 103d Engrs.

Randolph, Robert Isham. Maj., Engineers, U. S. A., 23d Engrs.

Ranney, Alfred Gardner. Capt., Coast Artillery, U. S. A., Battery A, 65th Artillery.

Rathjens, George W. Lt.-Col., U. S. A., 313th Engrs., A. P. O. 795, A. E. F., France.

Reding, James H. Capt., U. S. A., Co. A, 112th Engrs., A. P. O. 763, A. E. F., France.

Reed, Carl S. Maj., Ordnance, U. S. A.

Reed, Howard S. Capt., Engineers, U. S. A.

Reed, Paul Lyon. Commander, Civil Engineer Corps, U. S. N.

Reed, Percy Lawrence. 1st Lieut., Ordnance, U. S. A.

Reeder, Harry C. 1st Lieut., Engineers, U. S. A.

Rees, Bird Le Grand. Capt., Engineers, U. S. A.

Reeves, Carl H. Maj., Quartermaster Corps, U. S. A.

Reeves, Glenn S. Co. G, 23d Engrs., U. S. A. P. O. 784, A. E. F., France.

Reilly, Charles G. Lieut., Co. D, 313th Inf., A. E. F., France.

Renshaw, Alfred. Capt., Engineers, U. S. A., Headquarters Co., 302d Engrs., A. E. F., France.

Renshaw, F. O. 3d Engrs., Schofield Barracks, Hawaii.

Reynolds, Leo. F. 2d Lieut., Air Service (A.), U. S. A.

Reynolds, Ralph Whitney. 1st Lieut., U. S. A., 37th Engrs., A. E. F., France.

Rhoades, Theodore E. Capt., Engineers, U. S. A.

Rhodes, Eric H. Lieut., Australian Field Engrs., France.

Rice, John T. Capt., Engineers, U. S. A., 541st Engrs., A. E. F., France.

Rich, Edward D. Maj., Sanitary Corps, U. S. A.

Rich, Melvin S. 1st Lieut., Engineers, U. S. A., G. P. A., Labor Bureau, A. P. O. 702, A. E. F., France.

Richards, Walter A. 1st Lieut., U. S. A., A. E. F., France.

Richardson, F. H. Capt., Engineers, U. S. A., Co. C, 526th Engrs.; Asst., E. O. C. C., Eastern Divisional Areas, Demange, aux Eaux, Meuse, France.

Richardson, R. D. Capt., Engineers, U. S. A.

Riché, Charles S. Col., Engineers, U. S. A., Balboa Heights, Canal Zone, Panama.

Richmond, Allen P. 1st Lieut., Field Artillery, U. S. A., 301st Trench Mortar Battery, A. E. F., France.

Richmond, Julian P. W. Lieut., Civil Engineer Corps, U. S. N. R. F., 32 rue Fontaine St. Georges, Paris, France.

Riddle, William C. Capt., Sanitary Corps, U. S. A.

Ridgeway, George A. 1st Lieut., Engineers, U. S. A., 23d Engrs.

Riney, Arthur Herbert. Capt., Engineers, U. S. A., Co. A, 28th Engrs., A. E. F., France.

Ripley, Blair. D. S. O.; Lt.-Col., 1st Bn., Canadian Ry. Troops, B. E. F., France.

Ripley, Theron M. Maj., Engineers, U. S. A.

Risley, W. I. Capt., Engineers, U. S. A., 504th Engr. Bn., A. E. F., France.

Ritchie, J. Milton. Maj., U. S. A.; Chf., Operations Div., Motor Transport Corps.

Ritow, Herman. Co. B, 302d Engrs., A. E. F., France.

Ritter, Rollin. Capt., U. S. A., 130th F. A.

Roberts, Harry A. Capt., Engineers, U. S. A.

Roberts, Leo Bond. Lieut., Engineers, U. S. A., 25th Engrs.

Robertson, A. K. Lieut., Royal Anglesea R. E., No. 3 (Ry. Cos.), France.

Robertson, Fonzie E. Lieut., Field Artillery, U. S. A.

Robinson, Edward W. Maj., Engineers, U. S. A., 124th Engrs.

Robinson, Ernest F. Maj., Engineers, U. S. A.

Robinson, John Harvey. Private, Co. B, 314th Machine Gun Bn., A. E. F., France.

Robinson, William Ernest. Lieut., Engineers, U. S. A., Co. E, 1st Engrs., A. E. F., France.

Robson, Frederick T. Capt., Engineers, U. S. A., Headquarters, 82d Div., A. E. F., France.

Robson, Ralph E. Maj., Engineers, U. S. A., 316th Engrs, A. P. O. 776, A. E. F., France.

Roby, Harrison G. Lieut. (Senior Grade), Civil Engineer Corps, U. S. N. R. F.

Rockenbach, S. D. Brig.-Gen., U. S. A., G. H., A. E. F., France.

Rockhold, J. E. 1st Lieut., Co. E, 117th Engrs., A. E. F., France.

Rogers, H. Lincoln. Lt.-Commander, Civil Engineer Corps, U. S. N. R. F.

Rogers, Lester Cushing. 2d Lieut., Field Artillery, U. S. A., Anti-Aircraft School, Artillery Section, A. P. O. 702, A. E. F., France.

Ropes, E. H. Col., Engineers, U. S. A.

Rose, W. H. Brig.-Gen., U. S. A.

Rosenfeld, James R. 2d Lieut., Engineers, U. S. A., Co. D, 26th Engrs.

Rosher, Edward Marshall. Maj.; Deputy Supt. (Eng.), Mesopotamian Rys., Baghdad, West, Care, Asst. Director of Rys., Baghdad, West Div., Mesopotamia.

Ross, James G. Capt., Engineers, U. S. A., Co. C, 306th Engrs.

Ross, Lloyd McC. Private, Quartermaster Corps, U. S. A., Graves R. S., Unit C, A. P. O. 731, A. E. F., France.

Ross, Thomas A. Capt., Royal Engrs.; 2 A Whitehall Courts, London, S. W., England.

Rossell, Paul Francis. Capt., Engineers, U. S. A.; Adjt., 2d Bn., 23d Engrs., A. E. F., France.

Rothrock, W. P. Maj., Engineers, U. S. A.

Rourke, J. A. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Rousseau, Harry Harwood. Rear-Admiral, Civil Engineer Corps, U. S. N.

Rowe, Donald H. Lieut., Engineers, U. S. A.

Rowland, James W. Capt., Engineers, U. S. A., 214th Engrs.

Royal, Joseph N. 2d Lieut., Engineers, U. S. A., Headquarters, 53d Engrs.

Royall, Edward M. Asst. Civ. Engr., U. S. N. R. F.

Ruggles, Arthur V. Capt., Engineers, U. S. A., 17th Engrs.

Russell, Claud. Capt., Co. 7, E. O. T. S., Camp Humphreys, Va.

Russell, William Hepbourne. 1st Lieut., U. S. A., 5th F. A.

Rust, H. P. Lieut., Canadian Engineers.

Ruth, Edgar K. Capt., Engineers, U. S. A.

Ryland, Reis J. 2d Lieut., Signal Corps, U. S. A., 323d Field Sig. Bn.

Ryon, Henry. 1st Lieut., Quartermaster Corps, U. S. A.

Sackett, A. J. Maj., Quartermaster Corps, U. S. A.

Sadler, Carl L. Capt., Engineers, U. S. A.

Sadler, Walter Clifford. 1st Lieut., Co. F, 18th Engrs. (Ry.), U. S. Army P. O. No. 705, A. E. F., France.

St. John, R. U. 2d Lieut., Aviation Section, Signal Corps, U. S. A.; Information Officer, 95th Aero Squadron, A. E. F., France.

Salisbury, Alfred J., Jr. 1st Lieut., A. S. P., U. S. A., Aero Squadron No. 498.

Sample, William D. Corporal, 60th Trench Mortar Battery, B. E. F., France.

Sanger, Walter M. Capt., Engineers, U. S. A., A. E. F., France.

Sargent, Edward H. Capt., Engineers, U. S. A., 116th Engrs., A. E. F., France.

Sargent, J. A. Capt., Engineers, U. S. A., Care, Headquarters, Lines of Communications, A. E. F., France.

Saurbrey, Henry A. d'O. Capt., Engineers, U. S. A.

Sawyer, Charles L. 1st Lieut., Engineers, U. S. A.

Scammell, John Kimball. Lieut., 13th Reserve Bn., Canadian, Seaford, Sussex Co., England.

Schanck, F. R. Maj., Ordnance, U. S. A.

Scharff, Maurice R. Capt., Engineers, U. S. A.; Office of Chf. Engr., A. E. F., Tours, France.

Scheidenhelm, F. W. Lt.-Col., Engineers, U. S. A., 26th Engrs., A. E. F., France.

Schenk, Ernest E. Student, 1st Lieut., Engineers, U. S. A., Co. 2, E. O. T. S., Camp Humphreys, Va.

Schermerhorn, Richard, Jr. Capt., Sanitary Corps, U. S. A.

Schmucker, Beale M. 1st Lieut., U. S. A., 104th Engrs.

Schoder, Ernest W. Capt., Engineers, U. S. A.

Scholtz, H. F. Capt., Engineers, U. S. A.

Schoonmaker, Leon M. Capt., Engineers, U. S. A.

Schroeder, Seaton, Jr. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N. R. F.

Schwartz, Lloyd. Acting Master Gunner, Headquarters Co., 72d Artillery Regt.

Schwendener, K. DeW. Capt., U. S. A., 115th Engrs.

Scott, Guy. Capt., Engineers, U. S. A., 61st Engrs., A. E. F., France.

Scudder, Charles Morrison. Capt., Co. E, 107th Engrs., A. E. F., France.

Scudder, Henry D., Jr. 2d Lieut., United States Guards, U. S. A.

Seabury, George T. Maj., Quartermaster Corps, U. S. A., Constr. Div.

Seage, Clarence E. Ensign, U. S. N.

Searight, George Peter. 1st Lieut., Engineers, U. S. A., Co. B, 27th Engrs., A. E. F., France.

Seelye, Seth H. Co. G, 23d Engrs., A. E. F., France.

Selander, John E. Maj., Royal Engrs., Care A. D. Rys., B. E. F., Italy.

Senior, Frank S. Maj., Railroad Transportation Corps, U. S. A., Care, Director General of Transportation, A. P. O. 717, A. E. F., France.

Sessler, Grover C. Asst. Civ. Engr., U. S. N. R. F.

Seward, Oscar A., Jr. Capt., Engineers, U. S. A., 315th Engrs.

Sewell, John Stephen. Col., Engineers, U. S. A., Commanding Base Section No. 1, A. E. F., France.

Sexton, George F. 2d Lieut., U. S. A.

Seymour, Horatio. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Shafer, Ernest Alton. 1st Lieut., Engineers, U. S. A.

Shankland, Ralph Graham. 1st Lieut., Engineers, U. S. A.

Shaw, Arthur Lassell. Capt., Engineers, U. S. A., 301st Engrs., A. E. F., France.

Shaw, Arthur M. Maj., Engineers, U. S. A., Mech. Repair Unit No. 305.

Shaw, Franklin Dickinson. Capt., Engineers, U. S. A.

Shearer, D. McD. Capt., Engineers, U. S. A., 604th Engrs.

Sheley, Horace W. Capt., Engineers, U. S. A., A. E. F., France.

Shepard, George Milson. Capt., Engineers, U. S. A., Commanding 2d Bn., Headquarters, 606th Engrs.

Sheppard, Norman K. Master Engr., Junior Grade, Headquarters Co., 313th Engrs.

Sheridan, L. V. 2d Lieut., Artillery Section, Am. Anti-Aircraft School, U. S. A. P. O. 702, A. E. F., France.

Sherman, Edward C. Lt.-Commander, Civil Engineer Corps, U. S. N. R. F.

Shibley, Kenneth. Capt., U. S. A., 403d Engrs.

Sibert, William L. Maj.-Gen., U. S. A.

Silsbee, J. A. 1st Lieut., Ordnance, U. S. A.

Silvernail, Alfred Kimberly. Capt., Quartermaster Corps, Constr. Div., U. S. A.

Sjovall, Arvid H. Capt., Quartermaster Corps, Utilities Dept., U. S. A.

Skelly, J. W. Capt.; Supply Officer, 12th Engrs. (Ry.), A. E. F., France.

Skinner, John F. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Sleight, Reuben Benjamin. 1st Lieut., Air Service, U. S. A.

Slifer, Hiram J. Lt.-Col., 21st Engrs. (Light Ry.), A. E. F., France.

Sloan, William Glenn. 1st Lieut., Engineers, U. S. A.(*Unassigned*).

Sloan, William Griffith. Maj., Engineers, U. S. A.

Slocum, C. L. Capt., Ordnance, U. S. A.

Small, James H., Jr. Maj., Quartermaster Corps, U. S. A.

Smallman, R. A. Capt., Co. F, 25th Engrs., A. E. F., France.

Smead, R. C. Maj., Engineers, U. S. A. (*Unassigned*).

Smillie, Ralph. Lieut. (Junior Grade), U. S. N., U. S. S. *Massachusetts.*

Smith, Albert. Maj., U. S. A., 2d Bn., 309th Engrs.

Smith, Alexander Crawford, Jr. 1st Lieut., Engineers, U. S. A., Truck Co. No. 10, 23d Engrs., A. P. O. 774, A. E. F., France.

Smith, Charles E. Maj., Quartermaster Corps, U. S. A.

Smith, Chester Alexander. Capt., Sanitary Corps, U. S. A.

Smith, Chester K. Capt., Engineers, U. S. A., Care, Director of Constr. and Forestry, Headquarters, S. O. S., A. E. F., France.

Smith, Claire Howland Wallace. 1st Lieut., Engineers, U. S. A. (*Unassigned*), A. E. F., France.

Smith, Clarence Urling. Capt., Co. E, 107th Engrs., A. E. F., France.

Smith, Clarke Stull. Col., Engineers, U. S. A., Headquarters, 311th Engrs.

Smith, Edward King. 2d Lieut., Signal Corps, U. S. A.

Smith, Everett C., Jr. Capt., U. S. A., Co. A, 34th Engrs., A. P. O. 713, A. E. F., France.

Smith, Francis M. Maj., Engineers, U. S. A.; Commanding Officer, 51st Regt., T. C., U. S. A. P. O. 717, A. E. F., France.

Smith, Landon G. 1st Lieut., U. S. A., Co. I, 3d Bn., 22d Engrs., P. O. 703, A. E. F., France.

Smith, Layton Fontaine. Lieut., U. S. N. R. F.

Smith, Maxwell W. Maj., Engineers, U. S. A.

Smith, Merritt H. Col., 1st N. Y. Field Artillery, N. G. U. S.

Smith, Richard B. Private, 32d Service Co., Meteorological Section, U. S. A., Detached Air Service, A. E. F., France.

Smith, Robert C. Maj., Quartermaster Corps, U. S. A.

Smith, Schuyler M. Capt., Engineers, U. S. A., Bridge Section, Chf. Engr.'s Office, General Headquarters, A. E. F., France.

Smith, Shaler G. Lieut. (Student), Co. 4, E. O. T. S., Camp Humphreys, Va.

Smith, W. W. Master Engr., 16th Engrs. (Ry.), A. E. F., France.

Smoot, Lloyd D. Capt., Quartermaster Corps, U. S. A.

Snell, Edward Beniah. 1st Lieut., Engineers, U. S. A.

Snodgrass, W. T. Sergeant, Co. C, 28th Engrs., A. E. F., France.

Snook, Thomas E., Jr. Capt., Engineers, U. S. A., 306th Engrs.

Snyder, Frederic Antes. Col., U. S. A., 103d Engrs., A. P. O. 744, A. E. F., France.

Snyder, George Duncan. Capt., U. S. A., 102d Engrs.

Snyder, Hubert Earl. Capt., Engineers, U. S. A.

Soest, Hugo C. 1st Lieut., Engineers, U. S. A., Co. A, 25th Engrs., A. E. F., France.

Solomon, G. R. Maj., Engineers, U. S. A.

Soper, George A. Maj., Sanitary Corps, U. S. A.

Sourwine, J. A. Capt., Engineers, U. S. A.

Spear, Philip H. Capt., Engineers, U. S. A., Care, D. M. E. and E. S., P. O. 717, A. E. F., France.

Spear, Walter E. Maj., Quartermaster Corps, U. S. A.

Spencer, Charles B. Lieut., Care, Chf. Ord. Officer, P. O. 717, A. E. F., France.

Spencer, Herbert. Capt., Engineers, U. S. A., Co. H, 23d Engrs., A. E. F., France.

Sperry, L. N. 1st Lieut., Engineers, U. S. A., 6th Engrs., A. E. F., France.

Sprague, H. M. 1st Lieut., Engineers, U. S. A., Care, G. P. A., Labor Bureau, A. P. O. 702, A. E. F., France.

Stafford, Fred D. Capt., Engineers, U. S. A., 105th Engrs., A. E. F., France.

Stallings, John R. Sergeant, Headquarters Co., 3d Anti-Aircraft Bn.

Stanford, Homer R. Commander, Civil Engineer Corps, U. S. N.

Stanley, W. E. 1st Lieut., Engineers, U. S. A., Co. B, 101st Engrs., A. E. F., France.

Stanton, Charles B. Capt., Engineers, U. S. A., Co. E, 15th Engrs. (Ry.), A. E. F., France.

Stanton, W. L. 2d Lieut., Engineers, U. S. A., 304th Engrs.

Stark, Burr M. Private, Co. 5, E. O. T. S., Camp Humphreys, Va.

Starr, F. Charles. Capt., Quartermaster Corps, U. S. A.

Starrett, William A. Col., Quartermaster Corps, U. S. A.

Stayton, Edward M. Maj., U. S. A., 110th Engrs.

Stearns, Fred LeRoy. 1st Lieut., Engineers, U. S. A., Headquarters Co., 102d Engrs., A. E. F., France.

Stearns, Ralph H. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N.

Steep, James B. Capt., Engineers, U. S. A.

Steese, James Gordon. Col., Engineers, U. S. A., General Staff.

Steeves, C. McN. Lieut., 9th Field Co., Canadian Engrs., B. E. F., France.

Steinhauser, H. H. 2d Lieut., Air Service, U. S. A. (Aeronautics); Engr. Officer, 346th Handley-Page Service Squadron.

Stellhorn, Adolf. Capt., Engineers, U. S. A., Office, Chf. Engr., S. O. R., P. O. 717, A. E. F., France.

Stem, Clifford H. 1st Lieut., Engineers, U. S. A., 101st and 2d Engrs., A. E. F., France.

Stephens, Uel. Capt., Infantry, U. S. A., Co. D, 57th Inf.

Stern, Eugene W. Maj., Engineers, U. S. A.; Supt. of Roads, Care, C. G. Base Section No. 2, U. S. Military P. O. 705, A. E. F., France.

Stevenson, Markley. Ensign, U. S. N. R. F.

Stewart, Benjamin F., Jr. 1st Lieut., Engineers, U. S. A.

Stewart, John. Lt.-Col., U. S. A., 323d Engrs.

Stewart, John T. Maj., Engineers, U. S. A.

Stewart, Spencer J. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Stickle, H. W. Lt.-Col., U. S. A. (*Retired*).

Stidham, Harrison. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Stillwell, Howard L. 1st Lieut., Quartermaster Corps, U. S. A.

Stineman, Norman M. Capt., Engineers, U. S. A., Co. D, 33d Engrs., A. E. F., France.

Stivers, A. D. Capt., Infantry, U. S. A.

Stocker, Leslie W. 1st Lieut., Engineers, U. S. A.

Storey, Franklin S. 1st Lieut., Engineers, U. S. A., A. E. F., France.

Stowe, H. D. Capt., Engineers, U. S. A.

Strachan, Joseph J. Lieut. (Junior Grade), Civil Engineer Corps, U. S. N.

Strachan, Norman F. Private, 23d Engrs.

Strecker, R. A. Maj., Engineers, U. S. A., 2d Bn., 309th Engrs., A. E. F., France.

Street, J. Z. Private, Specialist Detachment, Co. A, 26th Engrs., A. E. F., France.

Strehan, George E. 2d Lieut., Field Artillery, U. S. A., Battery E, 351st F. A.

Strickler, G. B. Lt.-Col., Quartermaster Corps, U. S. A.

Strickler, T. J. Capt., Engineers, U. S. A.

Stronach, Robert S. Lieut., 10th Field Co., Canadian Engrs., B. E. F., France.

Stuart, Edward. Capt., Sanitary Corps, U. S. A.

Sturtevant, C. W. Lt.-Col., U. S. A., 15th Engrs., A. E. F., France.

Sullivan, John F. Maj., Quartermaster Corps, U. S. A., Constr. Div.

Summers, R. E. J. 1st Lieut., Engineers, U. S. A., Co. F, 15th Engrs. (Ry.), A. E. F., France.

Suter, Charles R. Brig.-Gen., U. S. A. (*Retired*).

Suter, Russell. Capt., Engineers, U. S. A., Care, S. E. O., Int. Sect., S. O. S., A. E. F., France.

Sutton, Frank. Maj., Engineers, U. S. A., 29th Engrs.

Swaren, J. W. Maj., Engineers, U. S. A.,

Swartz, Leon. Master Engr., 15th U. S. Engrs., A. E. F., France.

Sweeney, Harry C. Capt., Quartermaster Corps, U. S. A.

Sweetser, C. H. Capt., Engineers, U. S. A., Co. A, 43d Engrs., A. E. F., France.

Sweetser, E. O. Capt., Engineers, U. S. A. (*Unattached*), A. E. F., France.

Swett, Everett H. Capt., Engineers, U. S. A.

Sykes, George. Capt., Engineers, U. S. A., A. E. F., France.

Symonds, G. R. B. Capt., Engineers, U. S. A., 605th Engrs., A. P. O. 931, A. E. F., France.

Tainter, F. S. Maj., Engineers, U. S. A.

Talbot, K. H. Capt., Quartermaster Corps, U. S. A.

Tandrow, Walter S. 1st Lieut., Engineers, U. S. A.

Tate, R. L. Capt., Engineers, U. S. A.; Adjt., 1st Bn., 303d Engrs., A. E. F., France.

Taussig, John Wright. Private, E. O. T. S., Co. I, Camp Humphreys, Va.

Taylor, Arthur. Capt., Engineers, U. S. A.

Taylor, Edwin A. Maj., Engineers, U. S. A., 508th Engrs., A. E. F., France.

Taylor, Harry. Brig.-Gen., U. S. A.

Taylor, Henry. Capt., Engineers, U. S. A., 304th Engrs.

Taylor, Hugh M. Maj., U. S. A., Care, D. G. T., A. P. O. 762, A. E. F., France.

Taylor, Nelson. Lieut., U. S. N., U. S. S. *Bridgeport.*

Taylor, P. M. 2d Lieut., R. E., 237th Field Co., B. E. F., Italy.

Taylor, Seneca V. Capt., Coast Artillery, U. S. A.

Taylor, William T. Staff Capt., Air Ministry, R. A. F., England.

Taylor, Wyllys H. Capt., Engineers, U. S. A., 306th Engrs.

Ten Hagen, Henry. 2d Lieut., Engineers, U. S. A., 303d Engrs.

Tenney, Willis R. Capt., Engineers, U. S. A., Eng. Depot, U. S. A. P. O. 712, A. E. F., France.

Thomas, Charles D. Capt., Engineers, U. S. A., 6th Engrs. (Forestry), A. P. O. 909, A. E. F., France.

Thomas, W. E. Capt., Constr. Div., Quartermaster Corps, U. S. A.

Thomas, William Michael. Capt., Engineers, U. S. A.

Thompson, James A. 2d Lieut., Coast Artillery, U. S. A.

Thompson, Wilford Ashford. 1st Lieut., U. S. A., 4th Engr. Tr. Regt., Camp Humphreys, Va.

Thomsen, S. L. Capt., Engineers, U. S. A., Co. A, 57th Engrs., A. E. F., France.

Thomson, F. M. Capt., U. S. A., 39th Engrs., A. E. F., France.

Thornton, L. Earle. Lieut., Civil Engineer Corps, U. S. N. R. F., U. S. N. S., Le Croisic, France.

Throop, George H. Maj., Engineers, U. S. A., 24th Engrs.

Thurber, Clinton D. Commander, Civil Engineer Corps, U. S. N.

Thurston, Eugene T. Capt., Engineers, U. S. A., 2d Section Gen. Staff, G. H. Q., A. E. F., France.

Tilden, Charles Joseph. Capt., Engineers, U. S. A. (*Unassigned*).

Tinkham, Ralph R. Capt., Engineers, U. S. A., 420th Engrs.

Tinsley, R. B. Capt., Engineers, U. S. A., Co. C, 605th Engrs., A. E. F., France.

Tirrell, Charles Edwards. Lieut., U. S. A., Headquarters, U. S. Air Service, Paris, France.

Todd, Frank Herbert. Maj., Quartermaster Corps, U. S. A.

Todd, Oliver J. Capt., Engineers, U. S. A., A. P. O. No. 780, A. E. F., France.

Tolles, F. C. Capt., Engineers, U. S. A., 112th Engrs, A. E. F., France.

Tomlinson, Alfred Thomas. Maj., Canadian Engrs.; Insp., Small Arms Ammunition, Dominion Arsenal, Lindsay, Ont., Canada.

Tompkins, Robert Harry. 1st Lieut., U. S. A., 111th Engrs., A. E. F., France.

Topping, Perry. Capt., Engineers, U. S. A., 5th Engrs.

Torrance, William M. Capt., Engineers, U. S. A.

Townsend, C. McD. Col., Engineers, U. S. A., 12th Engrs. (Ry.), A. E. F., France.

Toyne, John Wilson. Capt., Quartermaster Corps, U. S. A.

Tracy, C. C. Capt., Coast Artillery, U. S. A.

Tracy, Herbert Herman. 1st Lieut., Engineers, U. S. A., Engr. Wagon Co. 4, 23d Engrs., U. S. A. P. O. 708, A. E. F., France.

Travers-Ewell, Andrew. Capt., Care, Gibbs & Co., Antofagasta, Chile.

Treser, Albert Paul. Co. A, 605th Engrs., A. E. F., France.

Trimpi, Allan Littell. 1st Lieut., U. S. A., 104th Engrs.

Trout, Alexander Linn. Capt., Engineers, U. S. A. (*Unassigned*), D. M. E. and E. S., A. E. F., Tours, France.

True, Albert O. Capt., Engineers, U. S. A.

Trueblood, P. McG. Lieut., U. S. N. R. F.

Tucker, H. F. Ensign, U. S. N. R. F.

Turley, Jay. Capt., Engineers, U. S. A., Care, Eng. Purchasing Officer, P. O. No. 702, A. E. F., France.

Turner, Daniel Norman. 2d Lieut., Engineers, U. S. A., 304th Engrs.

Turner, Nathaniel Parker. Capt., U. S. A., Co. B, 111th Engrs., A. E. F., France.

Tuska, Gustave R. Maj., Engineers, U. S. A.

Tyler, Richard G. Capt., Quartermaster Corps, U. S. A.

Tyson, William C. Capt., Engineers, U. S. A., Co. No. 2, Camp Custer Replacement Draft, A. E. F., France.

Uhler, W. D. Lt.-Col., Quartermaster Corps, U. S. A.

Van Amburgh, Thomas A. 1st Lieut., Quartermaster Corps, U. S. A.

Van Buren, Maurice Pelham. Capt., Engineers, U. S. A., 602d Engrs.

Vandemoer, John Jay. Capt., U. S. A., 467th Engrs., A. E. F., France.

Vandemoer, N. C. Capt., Engineers, U. S. A.

Vanderhoof, Arnold H. Lieut., U. S. N. (*Retired*), Radio Div., Bureau of Steam Eng.

Vandervoort, B. F. Capt., Engineers, U. S. A.

Vandevanter, Elliott. Capt., Engineers, U. S. A., Co. D, 503d Engrs., A. E. F., France.

Van Ness, R. A. Capt., Engineers, U. S. A.; Regimental Adjt., 604th Engrs., A. E. F., France.

Van Ornun, Samuel Judson. Capt., Engineers, U. S. A.

Van Suetendael, Achille O. Capt., Engineers, U. S. A.

Van Zile, Harry Lee. Maj., Engineers, U. S. A., Office, D. of C. and F., S. O. S., A. E. F., France.

Vaughan, Henry F. Capt., Sanitary Corps, U. S. A.

Vernon, Stephen B. Capt., Engineers, U. S. A. (*Unassigned*).

Verrill, George E. Maj., Engineers, U. S. A.

Vincent, J. I. Capt., Ordnance, U. S. A.

Vincent, W. H. 1st Lieut., Engineers, U. S. A.

Vogdes, Joseph J. Capt., Railroad Transportation Corps, U. S. A., Care, D. G. T., A. E. F., France.

Vogleson, J. A. Maj., Sanitary Corps, U. S. A.

Volk, Wendell Douglas. Capt., Engineers, U. S. A.

von Deesten, A. P. Maj., Engineers, U. S. A.

Wade, George W. 1st Lieut., Co. D, 2d Bn., 117th Engrs., 42d Div., A. E. F., France.

Wadsworth, George R. Maj., Signal Corps, U. S. A.

Wadsworth, Henry H. Maj., Engineers, U. S. A.

Wagner, Allan J. Capt., Engineers, U. S. A.

Wagner, John, Jr. 1st Lieut., Cavalry, U. S. A., First Corps School, Army P. O. No. 703, A. E. F., France.

Waite, Clement F. 1st Lieut., Engineers, U. S. A.

Waite, H. M. Lt.-Col., Railroad Transportation Corps, U. S. A., Care, Railroad Transportation Corps, A. E. F., France.

Waldron, Albert E. Col., U. S. A., 35th Engrs., A. E. F., France.

Walker, Edward G. Lieut., R. N. V. R.; 78 Cheyne Court, Chelsea, London, S. W. 3, England.

Walker, Elton D. Capt., Engineers, U. S. A., Co. A, 5th Engrs., A. E. F., France.

Walker, Harry Bruce. Capt., Engineers, U. S. A.

Walker, Meriwether Lewis. Col., Engineers, U. S. A., G. H. Q., A. E. F., France.

Walker, W. Kemp. Capt., Engineers, U. S. A.

Wallace, David A. Capt., Engineers, U. S. A., Headquarters, Director General of Transportation, A. P. O. 717, A. E. F., France.

Wallace, Harold U. Maj., Engineers, U. S. A.

Waller, Alexander C. 1st Lieut., Engineers, U. S. A., 22d Engrs., A. E. F., France.

Waller, Percy. Capt., Engineers, U. S. A.

Walter, Frank E. 1st Lieut., Co. B, 55th Engrs., A. E. F., France.

Walton, H. B. Capt., Engineers, U. S. A., 312th Engrs.

Wand, A. W. Lieut., Engineers, U. S. A.

Wanzer, James O. 1st Lieut., U. S. A., 47th Engrs., A. E. F., France.

Ward, George S. 2d Lieut., Engineers, U. S. A., Co. A, 117th Engrs., A. E. F., France.

Ward, Lyman Wise. Capt., Coast Artillery, U. S. A.; Adjt., 1st Bn., 63d Artillery.

Wardwell, Ralph W. Capt., Engineers, U. S. A.

Ware, Howard T. 2d Lieut., Quartermaster Corps, U. S. A., Bakery Co. No. 317.

Ware, John. Capt., U. S. A., 101st Engrs., A. E. F., France.

Ware, Norton. Capt., Engineers, U. S. A.

Warfield, Ralph M. Lt.-Commander, Civil Engineer Corps, U. S. N.

Waring, C. T. Maj., Signal Corps, U. S. A.

Warner, Elwin S. Capt., Engineers, U. S. A., Co. B, 301st Engrs.

Warnock, W. H. Capt., Quartermaster Corps, U. S. A.

Warren, Horace P. Maj., U. S. A., 55th Engrs., A. E. F., France.

Warren, James G. Col., Engineers, U. S. A.

Warren, Minton M. 1st Lieut., Engineers, U. S. A., Headquarters Co., 101st Engrs., 51st Brigade, 26th Div., A. E. F., France.

Warren, Philip R. Maj., Royal Engrs., P. C. E., A. P. O. S. 10, B. E. F., France.

Waterman, Earle L. 1st Lieut., Sanitary Corps, U. S. A.

Watkins, Guy A. Capt., Engineers, U. S. A.

Watson, D. M. Lieut., M. T., A. S. C., 100th Siege Battery, R. G. A., B. E. F., France.

Watson, George L. Lt.-Col., Engineers, U. S. A., General Staff, C. A. C. of S. G. 2, 1st Army Corps, A. E. F., France.

Watson, Loyall F. 1st Lieut., U. S. A., 403d Engrs.

Watson, Winslow B. 1st Lieut., U. S. A., 106th Inf.

Waugh, William H. Maj., Engineers, U. S. A.

Way, W. F. 2d Lieut., Co. D, 18th Engrs. (Ry.), U. S. Army Post Office No. 705, A. E. F., France.

Weaver, C. J. 1st Lieut., Engineers, U. S. A.

Weaver, Earll Chase. Civ. Engr., U. S. N. R. F.

Weaver, Frank L. Capt., Engineers, U. S. A., 305th Engrs.

Webb, Claude A. 2d Lieut., Field Artillery, U. S. A., 121st F. A., A. E. F., France.

Webb, De Witt Clinton. Commander, Civil Engineer Corps, U. S. N.

Webb, George H. Lt.-Col., 16th U. S. Engrs. (Ry.), A. E. F., France.

Webb, Walter Loring. Maj., Engineers, U. S. A., A. E. F., France.

Webster, Maurice A. Capt., Ordnance, U. S. A.

Weeks, W. C. Maj., Engineers, U. S. A., 32d Engrs., Care, Y. M. C. A. Hotel for Officers, Paris, France.

Weidman, William R. Capt., Engineers, U. S. A., 547th Engrs.

Welden, Ernest. Private, Co. A, 43d Engrs., A. E. F., France.

Welles, Theodore L., Jr. 1st Lieut., Engineers, U. S. A., 318th Engrs., 6th Div., A. E. F., France.

Wells, Emery. 1st Lieut., Engineers, U. S. A., A. P. O. 712, A. E. F., France.

Welsh, Russell D. Corporal, Co. F, 115th Engrs., A. E. F., France.

Wenige, Arthur E. Maj., Engineers, U. S. A., 317th Engrs.

Wenzell, Andrew P. Capt., Co. F, 16th U. S. Engrs. (Ry.), A. E. F., France.

West, Edward Hazzard. Capt., Engineers, U. S. A., 5th Engrs.

West, Wade C. Capt., Engineers, U. S. A.

Wheat, G. Neville. Capt., Engineers, U. S. A.

Wheeler, Edgar True. Capt., U. S. A., 125th Engrs.

Wheeler, Frank I. 2d Lieut., Aviation Section, Signal Corps, U. S. A.

Wheeler, Robert C. Capt., Quartermaster Corps, U. S. A.

Wheelock, De Forest A. Col., U. S. A.

Whiteaker, Robert O. Capt., U. S. A., 132d F. A.

Whitman, Ezra B. Maj., Quartermaster Corps, U. S. A.

Whitman, Ralph. Lt.-Commander, Civil Engineer Corps, U. S. N.

Whitney, C. S. Corporal, Co. F, 25th Engrs., A. P. O. 705, A. E. F., France.

Whitney, John T. 2d Lieut., Field Artillery, U. S. A., 2d Corps Artillery Park, A. E. F., France.

Whitney, Ralph Edward. Capt., Sanitary Corps, U. S. A.

Whitsit, Lyle A. Capt., Engineers, U. S. A.

Whitwell, E. Capt., General Service Staff, British War Office, Robert Treat Hotel, Newark, N. J.

Wickersham, John H. Lt.-Col., Engineers, U. S. A.; Deputy Engr. Supply Officer, General Headquarters, P. O. 706, A. E. F., France.

Widdicombe, R. A. Maj., Engineers, U. S. A.

Wiggin, Thomas H. Capt., Engineers, U. S. A., Headquarters, Lines of Communications, A. E. F., France.

Wiggins, Ralph Raymond. 1st Lieut., Aviation Section, Signal Corps, U. S. A.

Wilcox, Ernest Hardwick. Capt., Engineers, U. S. A., 543d Engrs., A. E. F., France.

Wild, H. J. Maj., Engineers, U. S. A.

Wildish, Frederic Newton. Capt., Engineers, U. S. A., Co. B, 309th Engrs.

Wilgus, H. S. Maj., Engineers, U. S. A.

Wilgus, W. J. Col., Engineers, U. S. A., A. E. F., France.

Willard, George T. Private, Co. E, 318th Engrs.

Willard, N. R. Capt., Engineers, U. S. A.

Willcomb, George E. Capt., Quartermaster Corps, U. S. A.

Willcox, Henry. Capt., Quartermaster Corps, U. S. A., Constr. Div.

Williams, Alan F. 2d Lieut., Co. B, 18th Engrs. (Ry.), U. S. Army P. O. No. 705, A. E. F., France.

Williams, George D. Capt., Engineers, U. S. A., Co. H, 548th Engrs., A. E. F., France.

Williams, Samuel W. Maj., Engineers, U. S. A.

Williamson, Harry. Capt., Royal Engrs.; O. C. 272d Ry. Constr. Co., R. E., E. E. F., Egypt.

Williamson, Lee H. 2d Lieut., Engineers, U. S. A., Co. A, 55th Engrs.

Williamson, Sydney B. Lt.-Col., Engineers, U. S. A.

Williar, Harry D., Jr. Maj., U. S. A., 1st Engrs., A. E. F., France.

Willis, Walter John. Lieut. (EDO).

Wilson, Edbert C. Capt., Engineers, U. S. A., A. P. O. 790, A. E. F., France.

Wilson, Everitt W. Capt., Engineers, U. S. A., Co. A, 304th Engrs.
Wilson, Harry P. Capt., Engineers, U. S. A., 310th Engrs.
Wilson, Louis A. Capt., U. S. A., 417th Engrs.
Wilson, Robert B. M. Capt., Engineers, U. S. A., 311th Engrs.
Wilson, William R. Maj., 23d Field Co., R. E., B. E. F., France.
Winchester, T. H. Lieut., Engineers, U. S. A.
Wing, Charles B. Maj., Engineers, U. S. A., 23d Engrs., A. P. O. 738, A. E. F., France.
Winn, Walter E. Lt.-Col., Engineers, U. S. A., 114th Engrs., A. E. F., France.
Winn, Walter S. Maj., Engineers, U. S. A.
Winton, Walter Ferrell. Capt., Field Artillery, U. S. A., 14th F. A.
Wondries, Charles H. 1st Lieut., Engineers, U. S. A., 428th Engrs.
Wood, B. Russell. Maj., Engineers, U. S. A., A. P. O. 713, A. E. F., France.
Wood, Frederic J. Maj., Engineers, U. S. A.
Woodard, Wilkie. Capt., Engineers, U. S. A., Co. H, 35th Engrs., A. P. O. 735, A. E. F., France.
Woodle, Bernon Tisdale. Capt., Engineers, U. S. A.
Woodruff, Charles W. 1st Lieut., U. S. A., 403d Engrs.
Woodruff, Glenn B. 1st Lieut., Engineers, U. S. A.
Woodward, Edwin C. Capt., U. S. A., 22d Engrs., A. E. F., France.
Woodward, Frank C. 1st Lieut., Engineers, U. S. A.
Woolworth, W. H. Capt., U. S. A., Headquarters, 2d Brigade, 1st Div., A. E. F., France.
Wooten, William P. Col., Engineers, U. S. A., Headquarters, 3d Corps, A. E. F., France.
Wright, Edward. Capt., Sanitary Corps, U. S. A.
Wright, Frederick J. Corporal, Camp Headquarters Co., Camp Dix, N. J.
Wright, Jesse B. Capt., Engineers, U. S. A.
Wright, John Bertram. Capt., Engineers, U. S. A.
Wrightson, William D. Col., Sanitary Corps, U. S. A.
Yates, Sheldon S. Field Artillery Officers' Training Camp, Camp Zachary Taylor, Ky.
Yeo, W. H. W. Capt., Engineers, U. S. A.
Yereance, Alex. W. 1st Lieut., Co. F, 305th Engrs., A. E. F., France.
Yost, Howard McC. Maj., Engineers, U. S. A.
Young, Charles C. 1st Lieut., Engineers, U. S. A.
Young, Frederick C. Capt., Engineers, U. S. A.; Adjt., 114th Engrs., A. E. F., France.
Young, George S. Capt., Engineers, U. S. A., G-2-C, A. P. O. 784, A. E. F., France.
Zinn, George A. Col., Engineers, U. S. A.

MEMBERSHIP

(From December 6th, 1918, to January 2d, 1919)

ADDITIONS

MEMBERS:		Date of Membership.
AXTELL, FRANK FOY. Chf. Engr., Refining and Pipe Line Dept., The Texas Co. of Mexico, Tampico, Mex.	Assoc. M. M.	June 6, 1911 Nov. 26, 1918
BLECH, EDWARD SORREL. Chf. Engr., Davison Sulphur & Phosphate Co., Cienfuegos, Cuba.	Assoc. M. M.	Mar. 13, 1917 Nov. 26, 1918
COLLYER, NORMAN. Asst. Educational Director, Vocational Instruction, Committee on Education and Special Training, War Dept., Washington, D. C.		Nov. 26, 1918
DAVIS, ROLAND PARKER. Bridge Engr., West Virginia State Road Comm.; Prof., Structural and Hydr. Eng., West Virginia Univ., Morgantown, W. Va.	Jun. Assoc. M. M.	Mar. 1, 1910 Oct. 7, 1914 Nov. 26, 1918
HERROLD, GEORGE HERBERT. Office Engr., Dept. of Public Works, St. Paul, Minn.		Nov. 26, 1918
HORTENSTINE, RALEIGH. Mgr., Memphis Plant, Virginia Bridge & Iron Co., Box 1048, Memphis, Tenn.	Assoc. M. M.	Oct. 29, 1912 Nov. 26, 1918
HUTCHINSON, ELY CHAMPION. Mgr., Eng. and Sales, Pelton Water Wheel Co., 19th and Harrison Sts., San Francisco, Cal.		Nov. 26, 1918
HUTCHINSON, FRANK DAVID. With Post & McCord, 15th Floor, 101 Park Ave., New York City		Nov. 26, 1918
KEMPKEY, AUGUSTUS. Cons. Engr., 1609 Hobart Bldg., San Francisco, Cal.	Jun. Assoc. M. M.	Mar. 31, 1903 Feb. 1, 1910 Nov. 26, 1918
KENNEDY, GERALD JOSEPH. Gen. Supt. of Constr., and Vice-Pres. and Gen. Mgr., The Bethlehem Chile Iron Mines Co., Tofo, La Higuera, Coquimbo, Chile		Oct. 8, 1918
SMITH, EDWARD UHR. Div. Engr., Philadelphia Branch, The Austin Co., 315 Greyling Ave., Box 105, Narberth, Pa.		Nov. 26, 1918
SPEYER, ELWIN GERALD. Asst. Engr., Dept. of State Engr., 801 Chamber of Commerce, Buffalo, N. Y.		Nov. 26, 1918
WEIDEL, JOSEPH. 1847 Chase Ave., Chicago, Ill.	Assoc. M. M.	July 10, 1907 Nov. 26, 1918

ASSOCIATE MEMBERS

BENNETT, BENJAMIN FRANKLIN. Supt. of Constr., Union Medical Coll., Care, China Medical Board, 5 San Tiao Hutung, Peking, China		Oct. 8, 1918

ASSOCIATE MEMBERS (*Continued*)

	Date of Membership.
BERKEFELD, PAUL CUNO. Head Surv., Arizona Hercules Copper Co., Ray, Ariz.	Nov. 26, 1918
BRADBURY, CHARLES EDWARD. Drainage and Agricultural Engr., Canton National Bank Bldg., Canton, Ill.	Nov. 26, 1918
CAMPBELL, JAMES ARCHIBALD, JR. Engr., Flood Control, Williamstown Drainage Dist.; Res., 1168 College Ave., Topeka, Kans.	June 18, 1918
CARROLL, CHARLES STEWART. Asst. Prof. of Civ. Eng., Eng. Coll., Univ. of Cincinnati, Cincinnati, Ohio.	Nov. 26, 1918
CHUCK, HONG SUNG. Gen. Mgr., Eng. Dept., Pacific Trading Co., 1st Floor, Whiteaway Laidlaw Bldg., Hankow, China.	Oct. 8, 1918
COURTNEY, MAURICE ALDEN. Lieut., R. T. C., U. S. A., A. P. O. 712, Am. Exp. Forces, France.	May 13, 1918
EAGLE, RAYMOND ROWE. Cons. Engr., New Bern, N. C.	Sept. 10, 1918
ELLISON, WILLIAM HENRY. With California & Hawaiian Sugar Refining Co., 369 Pine St., San Francisco, Cal.	Nov. 26, 1918
FITZPATRICK, MARK WILLIAM. Sergeant, 10th Engr. Service Co. (Forestry), Am. Exp. Forces, France.	May 13, 1918
GREEN, HOWARD RUGGLES. 2 Union Blk., Cedar Rapids, Iowa.	Nov. 26, 1918
HERBERT, JOHN RAY. Min. Engr., Box 131, Kittanning, Pa.	Nov. 26, 1918
HIRN, WILLIAM CULLEN. Asst. State San. Engr., Lansing, Mich.	Nov. 26, 1918
KENAN, JOSEPH GROFF. Engr. and Mgr., P. T. Clifford & Son, 359 Jefferson St., Valparaiso, Ind.	Nov. 26, 1918
LISMAN, OLIVER CROMWELL. 1st Lieut., Engrs., U. S. A., 13th Engr. Service Co., Jun.	Jan. 7, 1908
U. S. A. P. O. 717, Am. Exp. Forces, France Assoc. M.	Oct. 8, 1918
MCGIFFERT, CROSBY JAQUITH. Asst. Engr., Emergency Fleet Corporation, Dept. of Concrete Ship Constr., Box 1569 (Res., 1001 Selma St.), Mobile, Ala.	Nov. 26, 1918
MEEKER, RALPH INMAN. Civ. and Irrig. Engr., 1502 South Washington St., Denver, Colo.	Nov. 26, 1918
MELLEN, WINTHROP WARREN. Res. Engr., Sinclair Gulf Refining Co., Chronicle Bldg., Houston, Tex.	Nov. 26, 1918
NICHOLS, CHARLES SABIN. San. Engr., City Engr. Service Co.; San. Engr., Iowa Eng. Experiment Station; Associate Prof., Civ. Eng., Iowa State Coll., 830 Hodge Ave., Ames, Iowa.	June 18, 1918
O'CONNELL, THOMAS JAMES. Asst. Engr. of Constr., Bridges and Impvts., City of Baltimore, Room 12, City Hall, Baltimore, Md.	Nov. 26, 1918

ASSOCIATE MEMBERS (*Continued*)

	Date of Membership.
PADDOCK, ALBERT EDWARD. Field Engr., Constr., Lower Otay Dam, Lowerotay, *via* San Diego, Cal	Nov. 26, 1918
RICHARDSON, GEORGE BIBLE. 2816 Fourteenth Ave., West, Seattle, Wash	Nov. 26, 1918
RIKER, CARROLL LIVINGSTON, JR. Dist. Engr. and Supt. of Constr. (New York City Dist.), for Lupfer & Remick, 594 Ellicott Sq., Buffalo (Res., 2148 Sixty-fifth St., Brooklyn), N. Y	Oct. 8, 1918
SAVIDGE, SAMUEL LEIGH. Asst. Supt., J. A. McEachern Co., Inc., 1050 Cleveland Ave., Portland, Ore	Nov. 26, 1918
SCHMIDT, THEODORE JOHN. Co. 4, E. O. T. S., Camp A. A. Humphreys, Va.; Address, Care, F. C. Schmidt, Flucom, Mo	Nov. 26, 1918
TEMPLETON, RUSH MCELROY. Cons. Engr., Thermopolis, Wyo	Nov. 26, 1918
TITUS, JAMES HAMILTON. Asst. Engr., C. & E. I. R. R., 6600 South Union Ave., Chicago, Ill	Nov. 26, 1918
TONG, PAO-TUNG. Care, Dodwell & Co., Ltd., Shanghai, China	Sept. 10, 1918
WARREN, GEORGE EDWARD. Div. Engr., Promotion Bureau, Universal Portland Cement Co., 5903 Race Ave., Chicago, Ill	Oct. 8, 1918
YOUNGS, WALTER CHARLES. County Surv., Jackson County, Edna, Tex	Nov. 26, 1918

ASSOCIATES

HASKELL, WILLIAM COOK. 1328 Broadway, New York City	Nov. 26, 1918
STEINLE, CHARLES ALBERT. (Townsend, Steinle & Haskell, Inc.), 1328 Broadway, New York City	Nov. 26, 1918

JUNIORS

AQUINO Y ANGELES, ALEJO. Dist. Engr., Bureau of Public Works, Pasig, Rizal, Philippine Islands	Sept. 10, 1918
BUTTERWORTH, ARTHUR SACKETT. Eng. Staff, Am. Gas Co., West Washington Sq., Philadelphia, Pa	Sept. 10, 1918
JONES, VINCENT KNOWLES. Cons. Engr., East Las Vegas, N. Mex	Nov. 26, 1918

RESIGNATIONS

MEMBERS

	Date of Resignation.
CROZIER, WILLIAM	Dec. 31, 1918
FITCH, CHARLES LINCOLN	Dec. 31, 1918
GOODALE, LOOMIS FARRINGTON	Dec. 31, 1918
GRAVELLE, ALVIN	Dec. 31, 1918
HOWELL, GEORGE PIERCE	Dec. 31, 1918
MALMROS, NILS LORENTZ	Dec. 31, 1918

ASSOCIATE MEMBERS	Date of Resignation.
Bonnett, Charles Pierre	Dec. 31, 1918
Brereton, Thomas John	Dec. 31, 1918
Freudenberger, William Kaiser	Dec. 31, 1918
Gallagher, Joseph	Dec. 31, 1918
Gay, Howard Spooner	Dec. 31, 1918
Guerdrum, George Hagbart	Dec. 31, 1918
Koppelman, William Hoard	Dec. 31, 1918
Landers, Charles Scott	Dec. 31, 1918
Lynn, Henry Hudson Edwin	Dec. 31, 1918
Rightmire, Claude Henry	Dec. 31, 1918
ASSOCIATES	
Britton, John Alexander	Dec. 31, 1918
Thorn, Alfred William	Dec. 31, 1918

DEATHS

Bell, Alonzo Clarence. Elected Member, March 7th, 1900; died December 1st, 1918.

Dakin, Robert Edward. Elected Junior, December 2d, 1914; Associate Member, January 15th, 1917; died December 15th, 1918.

Deans, John Sterling. Elected Member, May 4th, 1887; died December 16th, 1918.

Denham, Donald Power. Elected Junior, April 17th, 1917; date of death unknown.

Eberly, Clarence Frederick. Elected Associate Member, September 6th, 1910; died December 19th, 1918.

Gillean, Charles Henry Howard. Elected Associate Member, October 8th, 1918; died November 8th, 1918.

Hardee, William Joseph. Elected Member, May 6th, 1896; died November 17th, 1918.

Honeyman, Bruce Ritchie. Elected Associate Member, September 5th, 1911; died in service (France), October 5th, 1918.

Just, George Alexander. Elected Junior, September 3d, 1884; Member, March 4th, 1891; died December 27th, 1918.

Kelly, Cassius William. Elected Junior, March 1st, 1882; Member, June 6th, 1888; died December 3d, 1918.

Laub, Hermann. Elected Member, September 1st, 1897; died December 10th, 1918.

Mills, Adelbert Philo. Elected Junior, September 3d, 1907; Associate Member, September 3d, 1913; died in service (France), October 20th, 1918.

Morrison, Henry Prentice. Elected Member, April 6th, 1898; died December 17th, 1918.

Norris, Alexander Joseph. Elected Member, October 3d, 1911; died May, 1918.

OGDEN, HAROLD COE. Elected Associate Member, October 29th, 1912; died October 22d, 1918.

PAGE, LOGAN WALLER. Elected Member, July 1st, 1909; died December 9th, 1918.

PECK, MYRON HALL. Elected Associate Member, January 5th, 1909; Member, March 14th, 1916; killed in action (France), October 9th, 1918.

PRATT, CAREY SIMON. Elected Associate Member, June 4th, 1913; died November 25th, 1918.

PRICHETT, FREDERIC BORRADAILE. Elected Junior, May 15th, 1917; wounded in action (France); died September 6th, 1918.

RHETT, EDMUND MOORE. Elected Junior, November 4th, 1902; Member, October 4th, 1910; died October 10th, 1918.

SCHULTZ, HAROLD AUGUST HASTRUP. Elected Junior, March 2d, 1915; Associate Member, May 15th, 1917; died November 5th, 1918.

SHIPLEY, ROBERT EARLE. Elected Associate Member, October 9th, 1917; died October 11th, 1918.

SMITH, WILLIS ROSWELL. Elected Member, March 4th, 1908; died August 1st, 1918.

SPERRY, AUSTIN RUSSELL WILLARD. Elected Junior, December 6th, 1910; Associate Member, January 15th, 1917; died December 6th, 1918.

WILSON, ELLIOTT HINCKLEY. Elected Member, February 1st, 1888; died November 27th, 1918.

WILSON, JAMES. Elected Associate Member, September 3d, 1913; died July 29th, 1918.

Total Membership of the Society, January 2d, 1919, 8 934.

MONTHLY LIST OF RECENT ENGINEERING ARTICLES OF INTEREST

(December 2d, 1918 to January 1st, 1919)

NOTE.—*This list is published for the purpose of placing before the members of this Society, the titles of current engineering articles, which can be referred to in any available engineering library, or can be procured by addressing the publication directly, the address and price being given wherever possible.*

LIST OF PUBLICATIONS

In the subjoined list of articles, references are given by the number prefixed to each journal in this list:

(2) *Journal*, Engrs. Club of Phila., Philadelphia, Pa.
(3) *Journal*, Franklin Inst., Philadelphia, Pa., 50c.
(4) *Journal*, Western Soc. of Engrs., Chicago, Ill., 50c.
(5) *Journal*, Eng. Inst. of Canada, Montreal. Que., Canada.
(6) *Journal*, Am. Inst. of Archts., Washington, D. C., 50c.
(8) *Stevens Indicator*, Hoboken, N. J., 50c.
(9) *Industrial Management*, New York City, 25c.
(11) *Engineering* (London), W. H. Wiley, 432 Fourth Ave., New York City, 25c.
(12) *The Engineer* (London), International News Co., New York City, 35c.
(13) *Engineering News-Record*, New York City, 15c.
(15) *Railway Age*, New York City, 15c.
(16) *Engineering and Mining Journal*, New York City, 15c.
(17) *Electric Railway Journal*, New York City, 10c.
(18) *Railway Review*, Chicago, Ill., 15c.
(19) *Scientific American Supplement*, New York City, 10c.
(20) *Iron Age*, New York City, 20c.
(21) *Railway Engineer*, London, England, 1s. 2d.
(22) *Iron and Coal Trades Review*, London, England, 6d.
(24) *American Gas Engineering Journal*, New York City, 10c.
(25) *Railway Mechanical Engineer*, New York City, 20c.
(26) *Electrical Review*, London, England, 4d.
(27) *Electrical World*, New York City, 10c.
(28) *Journal*, New England Water-Works Assoc., Boston, Mass., $1.
(29) *Journal*, Royal Society of Arts, London, England, 6d.
(32) *Mémoires et Compte Rendu des Travaux*, Soc. Ing. Civ. de France, Paris, France.
(33) *Le Génie Civil*, Paris, France, 1 fr.
(36) *Cornell Civil Engineer*, Ithaca, N. Y.
(42) *Proceedings*, Am. Inst. Elec. Engrs., New York City, $1.
(43) *Annales des Ponts et Chaussées*, Paris, France.
(45) *Coal Age*, New York City, 10c.
(46) *Scientific American*, New York City, 15c.
(47) *Mechanical Engineer*, Manchester, England, 3d.
(54) *Transactions*, Am. Soc. C. E., New York City, $12.
(55) *Journal*, Am. Soc. M. E., New York City, $10.
(56) *Transactions*, Am. Inst. Min. Engrs., New York City, $6.
(57) *Colliery Guardian*, London, England, 5d.
(58) *Proceedings*, Engrs.' Soc. W. Pa., 2511 Oliver Bldg., Pittsburgh, Pa., 50c.
(59) *Proceedings*, American Water-Works Assoc., Troy, N. Y.
(60) *Municipal and County Engineering*, Indianapolis, Ind., 25c.
(61) *Proceedings*, Western Railway Club, 225 Dearborn St., Chicago, Ill., 25c.
(62) *American Drop Forger*, Thaw Bldg., Pittsburgh, Pa., 10c.
(63) *Minutes of Proceedings*, Inst. C. E., London, England.
(64) *Power*, New York City, 5c.
(65) *Official Proceedings*, New York Railroad Club, Brooklyn, N. Y., 15c.
(66) *Gas Journal*, London, England, 6d.
(67) *Cement and Engineering News*, Chicago, Ill., 25c.
(71) *Journal*, Iron and Steel Inst., London, England.
(71a) *Carnegie Scholarship Memoirs*, Iron and Steel Inst., London, England.
(72) *American Machinist*, New York City, 15c.
(73) *Electrician*, London, England, 18c.
(74) *Transactions*, Inst. of Min. and Metal., London, England.
(75) *Proceedings*, Inst. of Mech. Engrs., London, England.
(77) *Journal*, Inst. Elec. Engrs., London, England, 5s.
(83) *Gas Age*, New York City, 15c.
(85) *Proceedings*, Am. Ry. Eng. Assoc., Chicago, Ill.
(86) *Engineering and Contracting*, Chicago, Ill., 10c.
(87) *Railway Maintenance Engineer*, Chicago, Ill., 10c.
(89) *Proceedings*, Am. Soc. for Testing Materials, Philadelphia, Pa., $5.

(90) *Transactions*, Inst. of Naval Archts., London, England.
(91) *Transactions*, Soc. of Naval Archts. and Marine Engrs., New York City.
(92) *Bulletin*, Soc. d'Encouragement pour l'Industrie Nationale, Paris, Fran e.
(93) *Revue de Métallurgie*, Paris, France, 4 fr. 50.
(96) *Canadian Engineer*, Toronto, Ont., Canada, 10c.
(98) *Journal*, Engrs., Soc. Pa., Harrisburg, Pa., 30c.
(99) *Proceedings*, Am. Soc. of Municipal Improvements, New York City, $2.
(100) *Professional Memoirs*, Corps of Engrs., U. S. A., Washington, D. C., 50c.
(101) *Metal Worker*, New York City, 10c.
(103) *Mining and Scientific Press*, San Francisco, Cal., 10c.
(104) *The Surveyor and Municipal and County Engineer*, London, England, 6d.
(105) *Chemical and Metallurgical Engineering*, New York City, 25c.
(106) *Transactions*, Inst. of Min. Engrs., London, England, 6s.
(107) *Schweizerische Bauzeitung*, Zürich, Switzerland.
(109) *Journal*, Boston Soc. C. E., Boston, Mass., 50c.
(110) *Journal*, Am. Concrete Inst., Philadelphia, Pa., 50c.
(111) *Journal of Electricity, Power and Gas*, San Francisco, Cal., 25c.
(113) *Proceedings*, Am. Wood Preservers' Assoc., Baltimore, Md.
(114) *Journal*, Institution of Municipal and County Engineers, London, England, 1s. 6d.
(115) *Journal*, Engrs.' Club of St. Louis, St. Louis, Mo., 35c.
(116) *Blast Furnace and Steel Plant*, Pittsburgh, Pa., 15c.
(117) *Engineering and Cement World*, Chicago, Ill.
(118) *Times Engineering Supplement*, London, England, 2d.
(119) *Landscape Architecture*, Harrisburg, Pa., 50c.
(120) *Automotive Industries*, New York City, 15c.

LIST OF ARTICLES

Bridges.

The Wilson Bridge at Lyons.* (12) Nov. 8.
Hunter Street Bridge, Peterborough, Ont. (96) Nov. 28.
The Sardah (India) Pontoon Bridge.* (21) Dec.
The Rock Island Builds Two Rainbow Arch Bridges.* (15) Dec. 6.
Mechanical Features of the Vertical Lift Bridge.* Horatio P. Van Cleve. (117) Dec. 15.
Time-Saving Method for Investigating Old Railway Bridges for Heavier Loading. C. F. Loweth. (Paper read before Am. Railway Bridge and Building Assoc.) (86) Dec. 25.
Stress Measurements on Niagara Gorge Railway Bridges.* Charles Evan Fowler. (13) Dec. 26.
Design of Concrete Truss Bridges. Frank Barber. (96) Dec. 26.
Erection Experiences at the Sciotoville Bridge.* Clyde B. Pyle. (13) Dec. 26.
Lignes d'Influence pour une Poutre Vierendeel.* G. Magnel. (33) Nov. 2.

Electrical.

Dimensions of Transformers. A. R. Low. (73) Nov. 15.
The Characteristics of the Commutator Ampere-Hour Meter. G. W. Stubbings. (26) Nov. 15.
The Grading of Direct-Current Starter Resistances. Percy H. Jackson. (26) Nov. 22.
The Effect of Power-Factor on Output of Rotary Converters with Reactance Control. R. G. Jakeman. (73) Nov. 22.
Transmission Line Has 4 800-Ft. Clear Span.* S. Svenningson. (96) Nov. 28.
Transformer Oil.* W. S. Flight. (73) Serial beginning Nov. 29.
Dixie Standard Aircraft Magnetos.* (120) Dec. 5.
Some Experiments with Long Electrical Conductors. John H. Morecroft. (Abstract of paper read before Inst. of Radio Engrs.) (73) Dec. 6.
Balancing and Suspending the Movable Coil of a Marine Dead-Beat Galvanometer.* J. Rymer Jones. (26) Dec. 6.
Floating Electric Power Station.* (11) Dec. 6.
The Modern Outdoor Substation.* M. M. Samuels. (27) Dec. 7.
Calibration of Power-Factor Indicators.* Walter Westcott Hoke. (27) Dec. 7.
Location for Power-Factor Corrective Apparatus. Will Brown. (27) Dec. 14.
Operating Methods that Increase Economy. C. F. Hirshfeld and C. L. Karr. (27) Dec. 14.

Marine.

Standard Concrete Barge for Use on the New York State Barge Canal.* (Extract from *Marine Engineering.*) (11) Nov. 15.
Electric Welding for Shipbuilding. W. S. Abell. (Abstract of paper read before North-East Coast Inst. of Engrs. and Shipbuilders.) (73) Nov. 22.

* Illustrated.

Marine—(Continued).

The Waller System of Reinforced-Concrete Ship Construction.* W. Noble Twelvetrees. (11) Nov. 22.
Building Concrete Vessels.* (117) Dec. 1.
Handling Shipbuilding Material at Alameda Shipyard.* (13) Dec. 5.
The Salvage of the *St. Paul.** (12) Dec. 6.
Building a Government 3 500-Ton Concrete Ship.* (13) Dec. 12.
Shear in Concrete Ships Critical Point in Design.* A. C. Janni. (13) Dec. 12.
Semi-Diesel Oil Engines.* F. D. Weber. (111) Dec. 15.
The Poole Harbor, England, Shipyard for Building Reinforced Concrete Vessels.* (86) Dec. 25.
Manufacturing Marine Steam Boilers.* E. A. Suverkrop. (72) Dec. 26.
La Propulsion Electrique des Navires.* A. Foillard. (33) Oct. 26.

Mechanical.

Power Plant at By-Product Coke Ovens.* F. E. Harris. (Paper read before Assoc. of Min., Elec. Engrs.) (22) Apr. 26.
Estimation of Naphthalene in Coal Gas. Harold G. Colman. (66) Oct. 29.
Coke Ovens: Economics of Operation. W. Colquhoun. (Paper read before the Midland Inst. of Min., Civ. and Mech. Engrs.) (118) Nov.; (57) Nov. 15.
The Economy of Briquetting Small Coal. J. A. Yeadon. (106) Nov.
Exact Data on the Running of Steam Boiler Plants. D. Brownlie and others. (11) Serial beginning Nov. 1.
Two *versus* Four-Cycle Internal-Combustion Engines.* Giovanni Chiesa. (11) Nov. 1.
The 200-H. P. Austro-Daimler Aero Engine.* (11) Nov. 1; (12) Nov. 1.
Notes on Benzol and Naphthalene Recovery.* Harold E. Copp. (Paper read before Midland Assoc. of Gas Engrs. and Mgrs.) (66) Nov. 5.
Note on the Effect of Temperature on the Resistances of Spark Plug Insulations. J. D. Morgan. (11) Nov. 8.
Unaccounted-for Gas. B. R. Parkinson. (66) Nov. 12.
A Review of the Preliminary Working Tests of Settle's Downward-Steaming Process for Intermittent Vertical Retorts.* (66) Nov. 12.
Giant Aeroplanes.* (Extracts from Report on Gotha Bomber with Notes on Giant Aeroplanes, issued by the Aircraft Production Dept.) (12) Nov. 15.
The Design and Construction of Diesel Engine Fuel Pumps.* G. L. Kirk. (11) Nov. 15.
Economic Considerations in Coke-Oven Practice. W. Colquhoun. (Abstract of paper read before Midland Inst. of Min., Civ. and Mech. Engrs.) (22) Nov. 15.
Some Observations Concerning (*A*) Liquid Purification of and (*B*) the Simultaneous Recovery of Sulphur and Ammonia from Coal Gas. P. Parrish. (Paper read before Southern Distri't Assoc. of Gas Engrs. and Mgrs.) (66) Nov. 19.
Corrosive Action of Flue Dust on Fire-Bricks.* J. W. Mellor. (Paper read before Inst. of Gas Engrs.) (66) Nov. 19.
The Whirling Speed of Shafts Supported in Three Bearings. Arthur Morley. (11) Nov. 22.
Steam-Raising with Waste Heat from Coal and Oil-Fired Furnaces.* (22) Nov. 22.
A New Coke Oven Installation.* (12) Nov. 22.
Transformer Oil.* W. S. Flight. (73) Serial beginning Nov. 29.
Determination of Stresses in Wire Rope as Applied to Modern Engineering Problems. James F. Howe. (55) Dec.
Steam Turbine Progress and Possibilities.* (116) Dec.
Standards for Large Taper Shanks and Sockets. Luther D. Burlingame. (55) Dec.
Present Practice in Thread-Gage Making.* Frank O. Wells. (55) Dec.
Electric Heat for Drying and Baking.* George J. Kirkgasser. (9) Dec.
Electrostatic Dust Precipitation.* William H. Easton. (9) Dec.
Combustion Characteristics of Coals.* (116) Dec.; (18) Dec. 7.
Suggestions for Burning Pulverized Coal. W. G. Wilcox. (From paper read before Am. Chemical Soc.) (62) Dec.
The Cooling Losses in Internal-Combustion Engines as Affecting Their Design. C. A. Norman. (55) Dec.
Inclined Retort Plant at Rome a Success.* S. Bent Russell. (83) Dec. 2.
Influence of B. t. u. on Gas Mantle Efficiency.* R. S. McBride and others. (Extract from *Technological Paper No. 110* of the U. S. Bureau of Standards.) (83) Dec. 2.
Oxy-Acetylene Pipe Welding and Cutting.* (83) Serial beginning Dec. 2.
Water-Gas Making with Bituminous Coals. (66) Dec. 3.
Dixie Standard Aircraft Magnetos.* (120) Dec. 5.
Rumpler Two-Seater Biplane.* (120) Dec. 5.
The L. V. G. Two-Seater Biplanes.* (12) Serial beginning Dec. 6.
The Heat Treatment of Aeroplane Parts.* (12) Dec. 6.
Seasoned Silica Brick from Roof of a Basic Open-Hearth Furnace After 135 Charges.* C. S. Graham. (22) Dec. 6.

* Illustrated.

Marine—Continued.

Mechanical

Mechanical—(Continued).

Ignition Magneto Construction: Some Points on Design, Magneto Magnetizing and Testing.* H. R. Van Deventer. (19) Dec. 7.
Cost and Charges of Motor Truck Service.* (18) Dec. 7.
Houdaille Brings Out Adjustable Car Suspension.* F. W. Bradley. (120) Dec. 12.
Details of the Liberty Engine.* J. Edward Schipper. (120) Dec. 12.
Dewatering Pits for Washed Coal.* (45) Dec. 12.
The Firing of Pulverized Lignite. M. C. Hatch. (111) Dec. 15.
Hairline Defects in Crankshafts.* P. J. Piccirilli. (120) Serial beginning Dec. 19.
Air Flow Through Poppet Valves.* (120) Dec. 19.
The Control of Concentrated Boiler Water is Essential.* Hartley LeH. Smith. (17) Dec. 21.
Steam Turbine Development. (19) Dec. 21.
Controlling Efficiency of Combustion. E. A. Uehling. (64) Dec. 24.
Electrical System of the Liberty Engine.* J. Edward Schipper. (120) Dec. 26.
Building Radiators for Automobiles and Other Purposes.* Ellsworth Sheldon. (72) Dec. 26.
Thrust Bearings.* Eugene U. Gibbs. (96) Dec. 26.
Coal—How Analyzed. Frederick L. Serviss (45) De . 26.
Tiroir Equilibré pour Machine à Vapeur Système Andrews et Cameron. (33) Oct. 26.
L'Avion Géant Zeppelin.* (33) Nov. 16.
La Roue Elastique I. D.* (33) Nov. 16.
L'Emploi du Gaz pour le Chauffage des Chaudières et des Appareils Métallurgique.* H. Thiry. (33) Nov. 23.
L'Etude Précise des Filets de Vis au National Physical Laboratory, de Londres.* (33) Nov. 23.
Zur numerischen Ermittlung der Schwingungszahlen élastischer Eigenschwingungen von Triebwerken. W. Kummer. (107) Oct. 12.

Metallurgical.

Electric Furnaces in Metallurgy.* (73) Nov. 15.
Electric Welding for Shipbuilding. W. S. Abell. (Abstract of paper read before North-East Coast Inst. of Engrs. and Shipbuilders.) (73) Nov. 22.
Balanced Reactions in Steel Manufacture. Andrew McCance. (Paper read before the Faraday Soc.) (11) Nov. 22; (22) Nov. 15.
Steam-Raising with Waste Heat from Coal- and Oil-Fired Furnaces.* (22) Nov. 22.
The Wear of Metals.* (Rails). (11) Nov. 29.
A Rapid Method for Determining Titanium and Chromium in Beach-Sand. E. P. Barrett. (103) Nov. 30.
Coke Factors Affecting Furnace Operation. G. D. Cochrane. (116) Dec.
Slag Temperature Influence on Refractories. Raymond M. Howe. (116) Dec.
Niter Cake Substitute for Pickling Steel. E. E. Corbett. (116) Dec.
Electric Furnace Data for Ferro-Tungsten. Robert M. Kenney. (116) Dec.
Performance of Small Electric Furnace.* (62) Dec.
Helical and Elliptical Springs.* Chauncey T. Edgerton. (Paper read before Am. Electrochemical Soc.) (105) Dec. 1.
Size *vs.* Recoveries in Ferro-Manganese Furnaces. E. S. Bardwell. (105) Dec. 1.
Oxy-Acetylene Pipe Welding and Cutting.* (83) Serial beginning Dec. 2.
Inspection of Steel Arc Welds.* O. S. Escholz. (20) Dec. 5.
The Heat Treatment of Aeroplane Parts.* (12) Dec. 6.
Electro-Cyanidation of Gold and Silver Ores.* Rush T. Sill and Harley A. Sill. (Abstract from *Mine and Oil Bulletin.*) (16) Dec. 7.
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Blast-Furnace Slag in Concrete and Reinforced Concrete. J. E. Stead. (Paper read before Cleveland Inst. of Engrs.) (22) Serial beginning Nov. 22.
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